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ABSTRACT

Ankole District, Uganda, is typical of many developing areas of Africa, characterized by rapid population change (a result of both growth and redistribution), inadequate school provision, and severe financial constraints. The study relates the present patterns and organization of elementary and secondary level educational provision to the existing and projected population distribution. Population density is seen as a crucial variable affecting the choice of strategy for the development of the school map. Basic techniques of locational analysis are used to suggest a policy for expanding the elementary level system and to identify suitable locations for new secondary level schools. (Photographs may reproduce poorly.) (Author)

An IIEP research project directed by Jacques Hallak

Planning the location of schools:
Ankole District, Uganda

W. T. S. Gould

Paris 1973
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Aims and methodology of the IIEP research project on planning the location of schools

As part of the Second United Nations Development Decade, many countries have set themselves the target of providing complete first-level school coverage, or at least of substantially extending their first-level school networks, together with a major development of the network of second-level schools. Achieving these targets in practice will involve them in finding solutions to the many awkward problems which arise in setting up the network of first- and second-level schools; in other words, they will need to develop the most appropriate methods for planning the location of schools.

The International Institute for Educational Planning had these problems in view when, towards the end of 1970, it began a series of investigations into the planning of first- and second-level school location; this was research of a clearly practical kind, meeting a concrete need of most Member States; a typical example of the kind of applied research which the Institute can undertake to assist Unesco Member States in implementing their educational plans and making optimum use of the resources available. Its objective is threefold:

1. To analyse and identify all the factors—pedagogical, economic, geographical, social, administrative, political, etc.—which must be taken into account in designing a methodology for planning the location of schools;
2. To formulate such a methodology in sufficient detail to be used as a guide to school location activities in Member States, while being sufficiently flexible and universal to be adaptable to the particular conditions of each country;
3. To apply the methodology to concrete problems facing education planners, such as universal first-level education, implementation of educational reforms, etc.

The IIEP began with a number of case studies in a sample, as varied as possible, of countries in Asia, Africa, Latin America and Europe. These studies were carried out in the field with the close collaboration of the national authorities and comprised the following specific stages:

1. A critical analysis of the features of the existing network of first- and/or second-level schools, according to the purpose of the study, in one or more educational areas of 50,000 to 200,000 inhabitants, selected for the variety of problems they exhibited;
2. A study of the medium-term evolution of the potential school population, taking account of demographic factors, the educational objectives and certain socio-economic variables;
3. Proposals for rationalizing the location of schools, based on the initial findings and the educational development prospects, and on all the pedagogical, economic, geographical and other factors of general application or peculiar to the region concerned, in each case showing the relative importance of the possible decisions.

These case studies will be completed towards the end of 1973 and will be published as and when they become available.[1] A report on the project as a whole will summarize the conclusions emerging from the case studies and endeavour to identify the methodological principles of planning the location of schools; this report is expected to be completed and published in 1974.

The entire project has been financed with voluntary contributions from various countries: the Ministry of Overseas Development (United Kingdom), SIDA (Sweden), CIDA (Canada), NORAD (Norway), etc., to which the IIEP is extremely grateful.

The Institute also thanks all the Member States of Unesco and the national specialists for co-operating in the implementation of this project.

1. Publication by the IIEP of studies conducted by outside consultants must not be taken to imply that the Institute necessarily associates itself with any conclusions or opinions expressed therein.

Preface

The study by W. T. S. Gould, Research Fellow at the Department of Geography of the University of Liverpool, on primary and secondary schools in Uganda is certainly one of the most original among the various IIEP case studies on school mapping carried out under the direction of Jacques Hallak.

In a country where, as the author emphasizes, the statistical data are badly lacking, how can critical analysis of the present location of schools be undertaken, and how can methodologies to be applied in a prospective study for 1979 be elaborated? Mr. Gould has accepted the challenge, and this is one of the chief merits and benefits of this study, from the methodological point of view.

Another original aspect of this study lies in the author's specialist background as a geographer; the emphasis is not placed particularly on the pedagogical aspects of school mapping, although Mr. Gould is very well qualified in this domain as well, but on all the geographical, demographic, and migratory phenomena typical of Uganda, which are fully known to the author and which throw light on the problem of schooling patterns from relatively new angles.

But probably the essential originality of this book relates to its subject, namely Uganda and its school system, with its modest public resources, its low apparent participation ratios (30 per cent in primary education, 3 to 4 per cent at secondary level), and an expansion of the school system relying partly on local initiative, partly on the initiative of the churches, and to a growing extent on public intervention.

After giving a brief picture of the school system in Uganda, Mr. Gould has concentrated on the district of Ankole, with 860,000 inhabitants, of which 87 per cent live in villages with less than 250 inhabitants, located in the south-west of Uganda which, because of its various geographical characteristics, constitutes a good example of the problems of school mapping in Africa. The study is divided into two distinct parts, one devoted to primary schools, the other to general secondary schools; the two parts have obviously some relation to each other, but the author has had to use different methodologies in each of them.

For both cases, Mr. Gould has based his analysis and prognosis on the present organisation of the school system, the origin of which goes far back in time, to the English colonial period. It is obvious that the educational situation in Uganda, as this study clearly shows, could invite the adoption of other structures (in this respect the IIEP commentary which follows Mr. Gould's study illustrates this) but the author has not felt able to suggest such alternatives.

With regard to primary schools, after a general presentation of the characteristics of the public and private networks for the whole country Mr. Gould has made an analysis in depth of the situation of three *gombororas* (Bubaare, Rubindi, Kyeizooba) of the district of Ankole, representing the different topographical, economic and demographic situations in Uganda. Uganda is divided into twenty districts; the district of Ankole consists of six counties, divided into sub-counties (*gombororas*) each containing several parishes.

With the help of a survey-questionnaire, the author was able to study on the one hand the catchment areas of schools of each of the *gombororas* (a circle of on average five kilometres radius around the schools) and on the other hand the factors of distortion (religious, pedagogical, etc.) which affect the choice of school by families in relation to their distance.

The prospective part of the study is based, to begin with, upon an estimation of future demographic trends in the district of Ankole up to 1979 and upon population migration within and outside the district. This is obviously familiar ground for the geographer, and the reader will appreciate the contribution of this discipline to the methodologies of school mapping.

In the second stage of his argument, the author has considered the school targets to be adopted for 1979; he has deliberately rejected the hypothesis of universal primary schooling as non-feasible in the short run and has adopted the minimum, but realistic, goal of maintaining participation rates at their present level; this leads nevertheless, in view of the rapid increase of the school-age population, to an expansion of the global enrolment by 50 per cent. As a matter of fact, as the author shows, higher hypotheses could have been adopted without altering significantly the methodology used for determining the desirable location of primary schools in 1979. Using the principle that school mapping should be the ideal instrument of equalising the educational supply, Mr. Gould suggests benefiting from the

general expansion of enrolment in order to seek a more equalized development of education among the *gombororas*.

The reader will then find great interest in the discussions in Chapter 3 of the section on primary schools; in this chapter the author examines the decision process which governs the development of comprehensive primary schooling with the seventh grade[1]. He defines the various criteria to be considered in altering the public school network, in relation to variations in the density of the population. The analysis related to areas with low density deserves special attention. Finally, Mr. Gould applies his methodology in a concrete way to the three *gombororas* and makes extremely definite and practical recommendations.

The school map at secondary level is examined from a totally different standpoint. The author describes the system in Uganda as a whole, and in particular the mechanisms by which candidates passing the national examination at the end of primary education choose freely the public secondary school which they prefer, and how they are allocated by school, taking into consideration the availability of places and their examination marks. In practice the transition rate from P7 (the last grade at primary) to S1 (first grade at secondary) does not exceed 15 per cent, which means that the system is extremely selective.

As the majority of the pupils in public secondary schools are boarders, distance is not an absolutely determining factor in the families' choice; consequently, other factors (religion, quality of schools, etc.) play an equally important role. By examining the conditions prevailing in the six public secondary schools and the four private schools of the district of Ankole Mr. Gould has tried, with the help of an *ad hoc* survey-questionnaire for pupils of standard 1, to identify the major criteria which determine the selection of secondary schools at the end of primary education. The study shows that out of 100 pupils with a scholarship leaving P7 in Ankole, only 47 per cent pursue their studies in the schools of this district and that reciprocally, in standard 1 classes in Ankole, only 57 per cent of the pupils are natives of this district; these figures illustrate the magnitude of the exchange of pupils among the districts.

Mr. Gould has then analysed separately each of the factors (distance, day/boarding, race, religion, quality of schools, etc.) which underlie the priorities adopted by families and the mobility of Ugandan pupils.

Because of the fact that, in the public system, recruitment at the secondary level is made on a national basis, one of the difficulties of the study was the exploration of the possibilities of development within the district of Ankole itself. In order to assess the development targets of schools in Ankole up to 1979, Mr. Gould has assumed that the transition rates from P7 to S1 will remain constant and has used the projections of enrolment at P7 made in the first part of the study; he has reached the conclusion that nineteen new classes of forty pupils each in S1 will be required. The arguments put forward here can obviously be challenged, but the principal interest of Mr. Gould's work is the methodology for locating these new classes.

In this respect, it is very interesting to read the answers to the various preliminary questions considered by the author, and particularly those relating to the desirable balance between the national[2] and regional methods of recruitment for the public system, and consequently to the possibility of developing the day system, co-educational schools, etc. These answers in fact govern the whole policy for expanding the secondary school system in the country.

Finally, using financial arguments which he justifies, Mr. Gould proposes to create an additional S1 day class in each of the five existing public schools, and to develop five new public day schools in the areas with a high population density, which means that in 1979 the boarding schools will receive only 50 per cent of the enrolments, but will be sufficient to maintain a certain mobility of Ugandan pupils, which is considered as politically desirable. Such a change in the school system implies a revision of the present policy of admissions.

The last comments by Mr. Gould are devoted to the methodology used for locating the five new day schools proposed in the district of Ankole. The author suggests placing the schools at the junctions of major roads and recommends a system of transport of pupils by school bus, which is a novel system in Uganda. He does not forget to mention another system which is very effective[3] in the context of African community-style tradition, namely the housing of pupils outside their families among relatives and friends.

To sum up, this extremely clear, lively and methodic study by Mr. Gould, in spite of the lack of statistical information which has limited the author's possibilities of analysis, provides valuable food for thought on the practical possibilities regarding the location and expansion of the primary and secondary networks in Uganda. Furthermore, the methodology used and the conclusions reached by the author have an importance which is not confined to this one country; this study, in fact, is a useful addition to the list of 'indicators' which need to be taken into consideration in the preparation of school maps, whose identification was precisely the object of the IIEP research project.

I express my gratitude to Mr. Gould for the valuable contribution he has given to the work of the IIEP in the field of school mapping.

RAYMOND POIGNANT
Director, IIEP

1. The private primary schools are numerous, but rarely give seven grades. The official strategy consists in offering seven grades in public schools.
2. It is desirable to continue national recruitment for political reasons.
3. At primary as well as secondary school level.

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The field work for this case study was carried out in Ankole during November and December, 1971. The District Education Officer, Mr. Mawata, and his staff were most helpful and enthusiastic. I hope this report will be of some value to them in their efforts to improve education in the district. Colin Gregory of Ntare School, Mbarara, was extremely generous in his hospitality, and my work in the schools themselves was greatly facilitated by two very able pupils from Ntare School, Gordon Bushaara and John Tumukunde, who acted as guides, interpreters and interviewers.

The maps are based on originals drawn by Miss Joan Treasure and Miss Sandra Pearce, Department of Geography, University of Liverpool, and John Manina, Department of Geography, Makerere University, and the several drafts of the text typed by Mrs. M. Thompson. I am indebted to Professor Bryan Langlands for allowing me to use the facilities of the Geography Department of Makerere University, and to Dr. R. M. Prothero, Director of the African Population Mobility Project, for his kind advice and encouragement at all stages. This study is an integral part of the work of the African Population Mobility Project which is financed by the Social Science Research Council of UK and its support is gratefully acknowledged. The helpful comments of Jacques Hallak and James McCabe of the IIEP kept me from straying too far from the general guidelines of the School Map Project.

PART ONE
I. Introduction

A large proportion of the limited resources of developing countries is devoted to the expansion of education. This is usually a planned expansion designed to obtain the maximum return from a limited investment. Not surprisingly, therefore, educational planning has been done chiefly, but not exclusively, by economists and has been closely related to national economic planning in general and manpower requirements in particular. This has inevitably resulted in an emphasis on gross expansion—the total number of pupils will expand by x per cent in y years. The main direction of educational planning has therefore been towards achieving the most efficient *aggregate* system.

But within this most efficient aggregate there exists the possibility for considerable variation in spatial patterns of expansion within any one country, for example:

a) Given that there needs to be a doubling of second-level school enrolments, will this involve expanding existing schools or establishing new schools, and, if the latter, where ought these schools to be situated?
b) Given that it is planned to increase national first-level school enrolment ratios to 50–75 per cent over a given period, is this to be done by concentrating expansion in those parts where enrolment ratios are below the average or by an even expansion throughout the country?
c) Is it better to minimize the movement of pupils or to locate schools according to criteria other than the distribution of pupils' homes, for example in a town, i.e. is it better to move schools to the pupils or pupils to the schools?
d) What is the most efficient spacing of first-level schools in rural areas which have a dispersed settlement pattern and inadequate public transport?

Such questions as these need to be examined in any balanced educational plan and these and other questions relating to spatial patterns of educational provision and expansion are the area to which the School Map Project is addressed. Case studies are essentially geographical exercises in which an attempt is made to analyse spatial patterns of provision and enrolment and to make planning recommendations such that the spatial structure of the system at some future date is more rational than at present. This becomes essentially a problem for locational analysis—where to locate new schools.

1. Maps in educational planning

Maps are the basic tools of spatial analysis. They convey data in a distributional form and their compilation is a necessary preliminary for many planning exercises. The most widely used maps in social planning are those showing the distribution of the population in any area, and the physical planning of items of social provision—dispensaries, shops, schools, etc.—should depend to a very great extent on the distribution of the population. It seems axiomatic that the distribution of facilities should be related in some way to the distribution of users of these facilities, but in many cases the distributions seem to be less closely related, whether by accident of history or deliberate planning, than might be expected.

The mapping of the distribution of schools has, in general, been sadly ignored by geographers, planners and others. There is very often a general awareness of the distribution of schools and an assumption, based on some subjective judgement, that the distribution is generally satisfactory in that it is 'more or less' related to the distribution of population. In recent years the rough justice assessment of the distribution of schools has become questioned in several developed countries, e.g. in the USA with the bussing issue related to the forced integration of schools in the interests of racial harmony and the movement away from neighbourhood schools; in the UK with the controversy over the structure of second-level education and the role of the neighbourhood comprehensive school. In developing countries, there is controversy over the distribution of educational opportunities within any one country and a general demand for schools to be more widely spread throughout the country, reflecting the distribution of the population. In such countries, where education is usually expanding rapidly and new schools are being built, there is more scope than in developed countries for using the school map as a tool for planning the direction of educational expansion.

Yet in developing countries there is all too often very little appreciation of the distributional aspects of the educational system. Decisions on the location of new schools are not always based on sound principles of the distribution of population and the deficiencies in the existing

system. In Nigeria, for example, in the early 1960s three new schools were established with the aim of fostering national integration. 'The three Ministers who decided their location came from Sokoto, Warri and Afikpo: the three schools were allocated to Sokoto, Warri and Afikpo.'[1] Planning from premises that were more rational in a spatial sense might have given the schools different locations.

A map of the distribution of schools is not, in itself, sufficient as a basis for planning and must be related to other phenomena, not least of which is the distribution of pupils, but also including the settlement and communications patterns, the distribution of markets and other facilities, relief and drainage, etc. Each of these affects the distance and direction of the journey to school and each case study of the School Map Project is essentially a study of patterns of movement of pupils from home to school. The chief questions to be asked and answered involve the analysis of the distance and direction of this journey and how patterns of individual and group mobility will affect and will be affected by the growth of the educational system.

2. Educational planning in Uganda

Uganda is beset with many of the problems that are typical of African countries. It is a relatively small state with a limited resource base and an overwhelmingly rural economy that generates a very meagre *per capita* income. The country is engaged on the very arduous task of achieving rapid economic and social development, but there is a considerable gulf between planned and actual rates of growth. Development is restricted by many factors; prominent among them is the lack of skilled manpower.

The importance of an educated population as a vehicle for development is acknowledged and the government has placed very considerable emphasis on the expansion of the educational system. In aggregate terms the expansion within the last ten years has been most impressive and has been closely linked to the manpower needs of the economy. 'In education our first priority must be the expansion of the education system to provide the trained manpower necessary for rapid economic development.'[2] This is not to deny the chief long-term aim of educational policy—to achieve universal, free and compulsory education—but in the short term the needs of the economy, together with the immense difficulties of financing and carrying out a policy of achieving universal education,[3] have necessitated that the manpower planning approach, linked to the needs of the economy, be paramount.

The emphasis on the manpower planning approach with the setting of national aggregate enrolment targets has resulted in a relative neglect of geographical and qualitative aspects of the system. There has been a general desire on the part of the government to have educational opportunity spread as widely as possible throughout the country and, although there are regional disparities in patterns of educational opportunity, only in North and South Karamoja Districts in the north-east of the country are there particularly large discrepancies between district enrolments and the national average.[4]

Increasing enrolments have been accompanied by a spread of educational provision within each of the eighteen districts. In an attempt to reach as large a proportion of the population as possible, schools have been built in rural areas away from towns and large mission stations where the earliest schools were located. Certain crucial questions relating to this expansion have seldom been raised. What percentage of the population is now within the effective catchment area of a school? To what extent will more schools be required if percentage enrolments increase? Where should new schools be located?

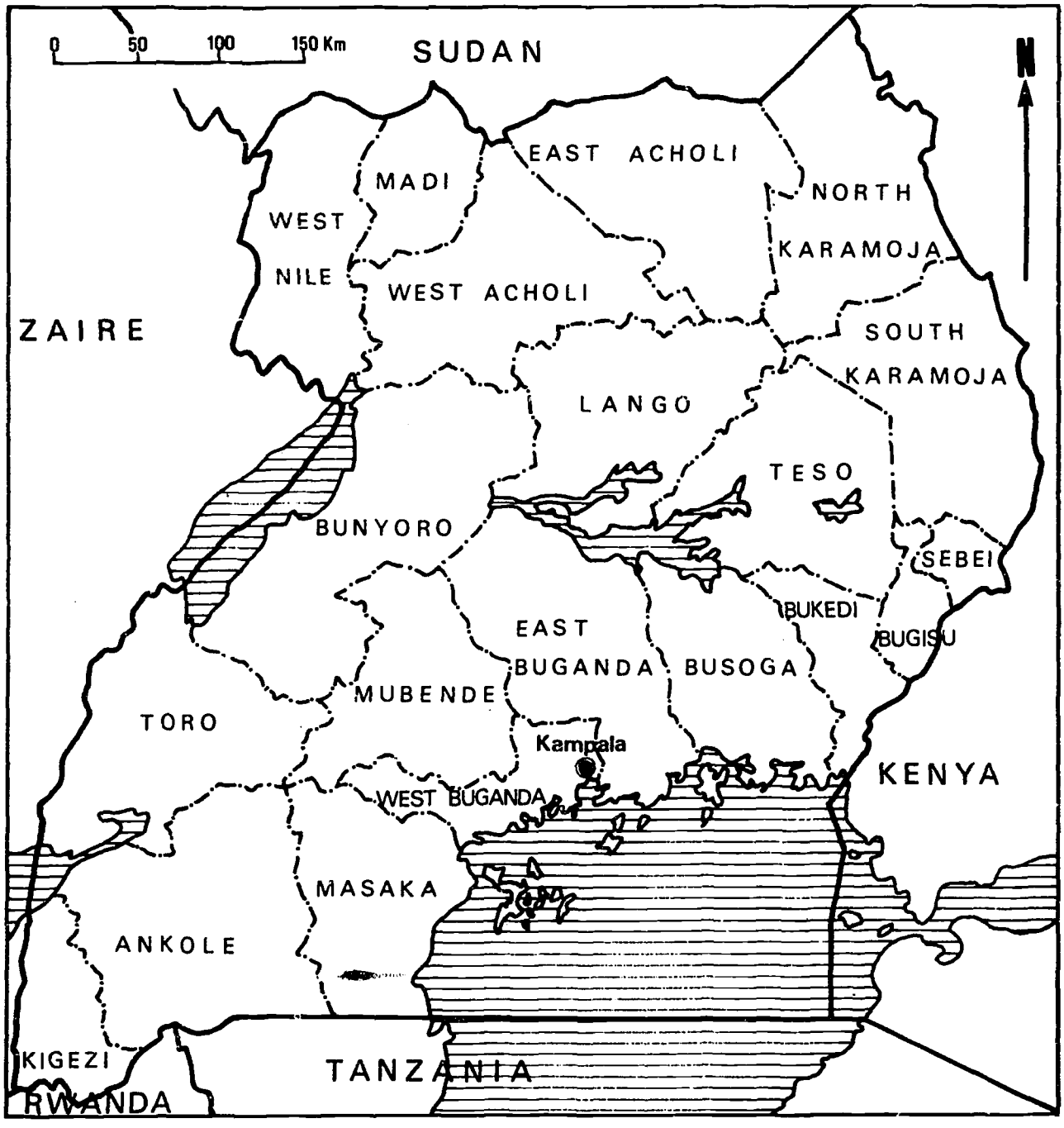
3. The Ankole case study

The aim of each of the case studies of the School Map Project is to consider the educational system of the area chosen at a disaggregated level by examining its existing spatial structure and to make recommendations for a more rational school map for some future date. In order to do this, each case study must consider the questions raised above in the light of projected population and policy changes within the planning horizon and can only proceed through thorough analysis of patterns of provision and enrolment at the local level.

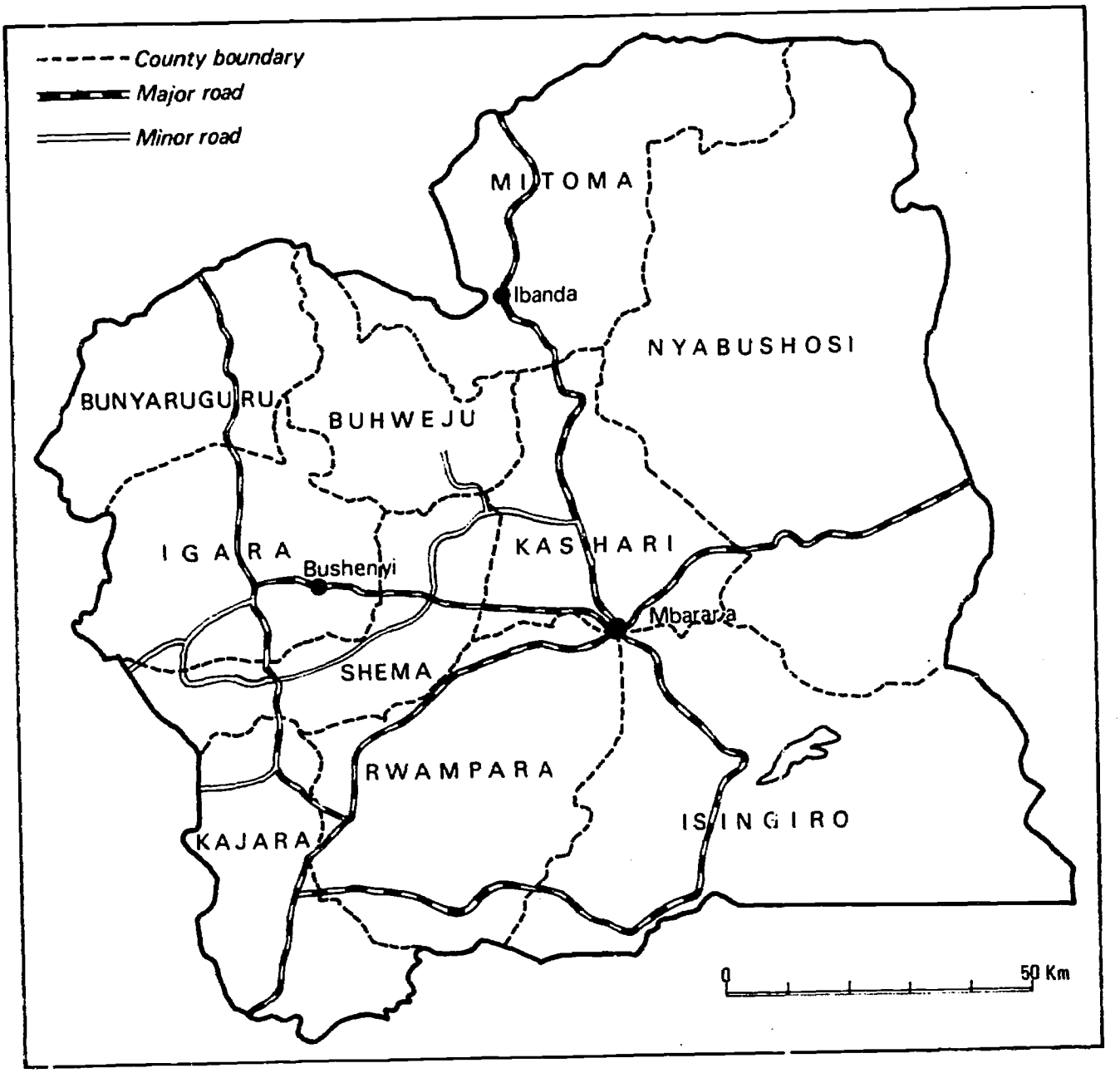
The Ankole district of Uganda has been chosen for consideration in this report since it has an educational system with problems and prospects that are not untypical of other districts of Uganda, and elsewhere in Africa. It therefore provides a suitable example of the general problems involved in a school mapping exercise in Africa and the techniques that might be employed in planning a more rational map. In Ankole, population increase is very rapid and, if participation rates are not to fall, enrolments must match this increase. Furthermore, since there has been and will continue to be a redistribution of the population within the district, the distribution of demand for schools will also change. The central theme of the case study is to assess how the spatial structure of the educational system should change where there is likely to be a 50 per cent increase in population in a ten-year period and, accompanying this growth, a very considerable redistribution of population due to migration.

The report is divided into two main sections, one each for first- and second-level education. This is necessary because first- and second-level education are organized quite differently, so that problems encountered in the examination of existing school maps and in making recommendations for future development require differing approaches and methodology. In both cases, however, the analysis of the general features of the system has been supplemented by a field survey and data collection to identify some of the major factors affecting these existing patterns. Understanding the mechanisms of the existing school maps has enabled the planning of rational first- and second-level school maps for 1979.

1. See J. O'Connell, 'The political class and economic growth' in *Nigerian journal of economic and social studies*, Ibadan, 1966 (Vol. 8, No. 1, pp. 125–40)
2. See Republic of Uganda, *High-level manpower survey, 1967, and analyses of requirements, 1967–81*, Entebbe, Government Printer, 1969 (Introduction, paragraph 6)
3. See N. Bennett, 'Uganda: educational cost evaluation' in *Educational cost analysis in action: case studies for planners*, Vol. III, Paris, Unesco:IIEP, 1972.
4. See W. T. S. Gould, 'Patterns of lower school enrolments in Uganda' in *East African geographical review*, Kampala, 1972 (No. 10, pp. 65–74)



MAP 1. *Administrative districts of Uganda.*



MAP 2. *The counties of Ankole District*

II. Background data

Ankole is situated in the south-west of Uganda; its chief town, Mbarara, lying some 275 kilometres from Kampala, the national capital (see Map 1). The 1969 census enumerated a population of 861,145 in Ankole at an average density of fifty-four per square kilometre.

1. Administrative organization

Ankole is divided into ten counties (see Map 2) or *sazas*, each with some historical basis,[1] although county boundaries have been altered several times during the seventy years that Ankole has been considered an administrative unit.[2] Each county is divided into sub-counties or *gomboraras* (see Map 3) and each *gomborora* into parishes or *mirukas*, the smallest administrative sub-division. Mbarara, the chief administrative and commercial centre, had a population of over 16,000 in 1969, but apart from this only Bushenyi has a population of over 1,000. Only 2.9 per cent of the population live in settlements of over 250 people.

2. Major geographical regions

The district may be divided into three major geographical areas:

a) The eastern plateau—comprising the counties of Nyabushosi, Kashari, Mitoma, Isingiro and Rwampara. The landscape is generally undulating at between 1,250 m. and 1,500 m. above sea-level, rising to 1,600 m. in Rwampara, and the area has less than 1,000 mms. of rain per year, most of which falls during the two rainy periods of October–December (the more important) and March–June. A pastoral economy dominates since most parts are too dry for permanent cultivation.

b) The western hills—comprising the counties of Igara, Shema, Buhweju, Kajara and south and east Bunyaruguru. This area has a higher average altitude than the east and the relative relief is greater. Local differences between valley bottom, hillside and hilltop are of greater importance for the rural economy and the distribution of population than relief differences within this area or in Ankole as a whole. Rainfall is also higher in the western hills than in the east, reaching over 1,400 mms. per annum in the higher areas, but distributed in the same seasonal pattern as in the eastern area. This wetter and higher area has a cultivating economy dependent upon the production of bananas as a food staple by peasant farmers,[3] with coffee and tea as cash crops and some development of estate-produced tea in Igara.

c) The Rift Valley floor—comprising the north-western part of the district in Bunyaruguru county. The western branch of the East African Rift Valley system presents a very sharp break in the relief with the valley floor leading down to Lake Edward and Lake George at 914 m., over 600 m. below the hills of Bunyaruguru and Buhweju. The Rift valley floor is hot and relatively dry and given over to the large game reserve of Queen Elizabeth National Park.

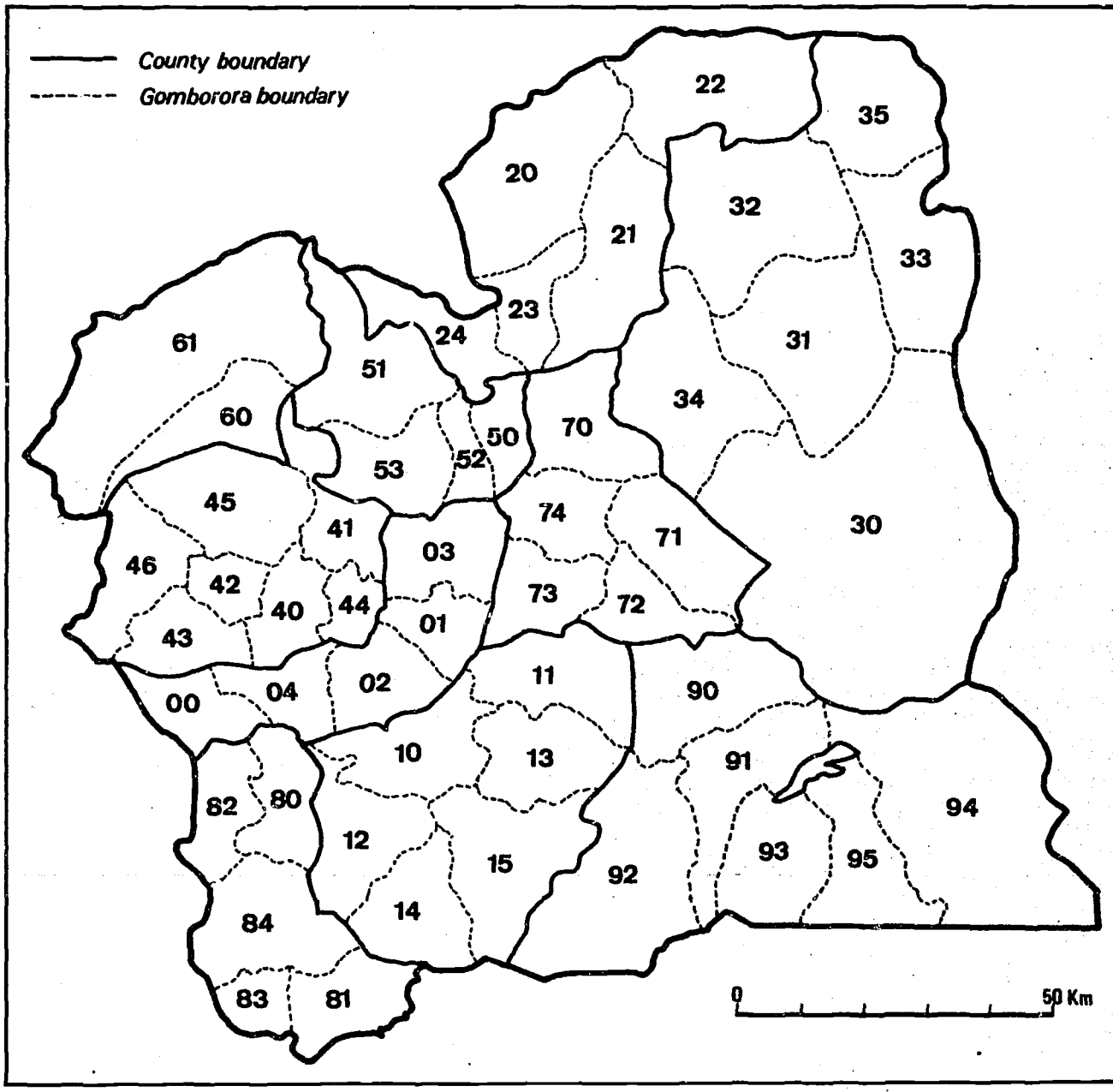
3. Population

This three-fold division is reflected in the population distribution (Map 4) and density (Map 5) in Ankole. The most densely populated areas are the well-watered counties of Igara and Shema with rural densities rising to 200 per km², but with a mean density of over 100 per km². Densities are much lower in the eastern counties, particularly in the driest areas of Nyabushosi and Isingiro. The rift valley floor is almost completely uninhabited, for human habitation is forbidden within the limits of a National Park. A fishing village such as Rwenshama on the shores of Lake Edward is specifically excluded from the park.

4. Economy

Even by Ugandan standards Ankole is a poor district. There is little employment outside agriculture, with only 15,192

1. See H. F. Morris, *A history of Ankole*, Nairobi, East Africa Literature Bureau, 1962
2. B. W. Langlands, *The population geography of Ankole district*. Kampala, Makerere University, 1971 (Department of Geography Occasional Paper, 42)
3. See D. N. McMaster, *A subsistence crop geography of Uganda*. Bude (Cornwall), Geographical Publications, 1962



MAP 3. *Administrative divisions (gombororas) of Ankole District*

Sherna County
00 Kabira
01 Kagango
02 Shuku
03 Kigarama
04 Kitagata

Rwampara County
10 Ndeiza
11 Rugando
12 Ntungamo
13 Bugamba
14 Ruhama
15 Rukoni

Mitoma County
20 Bisheshe
21 Kanoni
22 Buremba
23 Nyabuhikye
24 Rukiri

Nyabushosi County
30 Nyakasharara
31 Kenshunga
32 Kazo
33 Kinoni
34 Kashongi
35 Burunga

Igara County
40 Kitsibo (Bumbaire)
41 Kyabugimbi
42 Nyabubaare
43 Mitooma
44 Kyeizooba
45 Kyamahunga
46 Bitereko

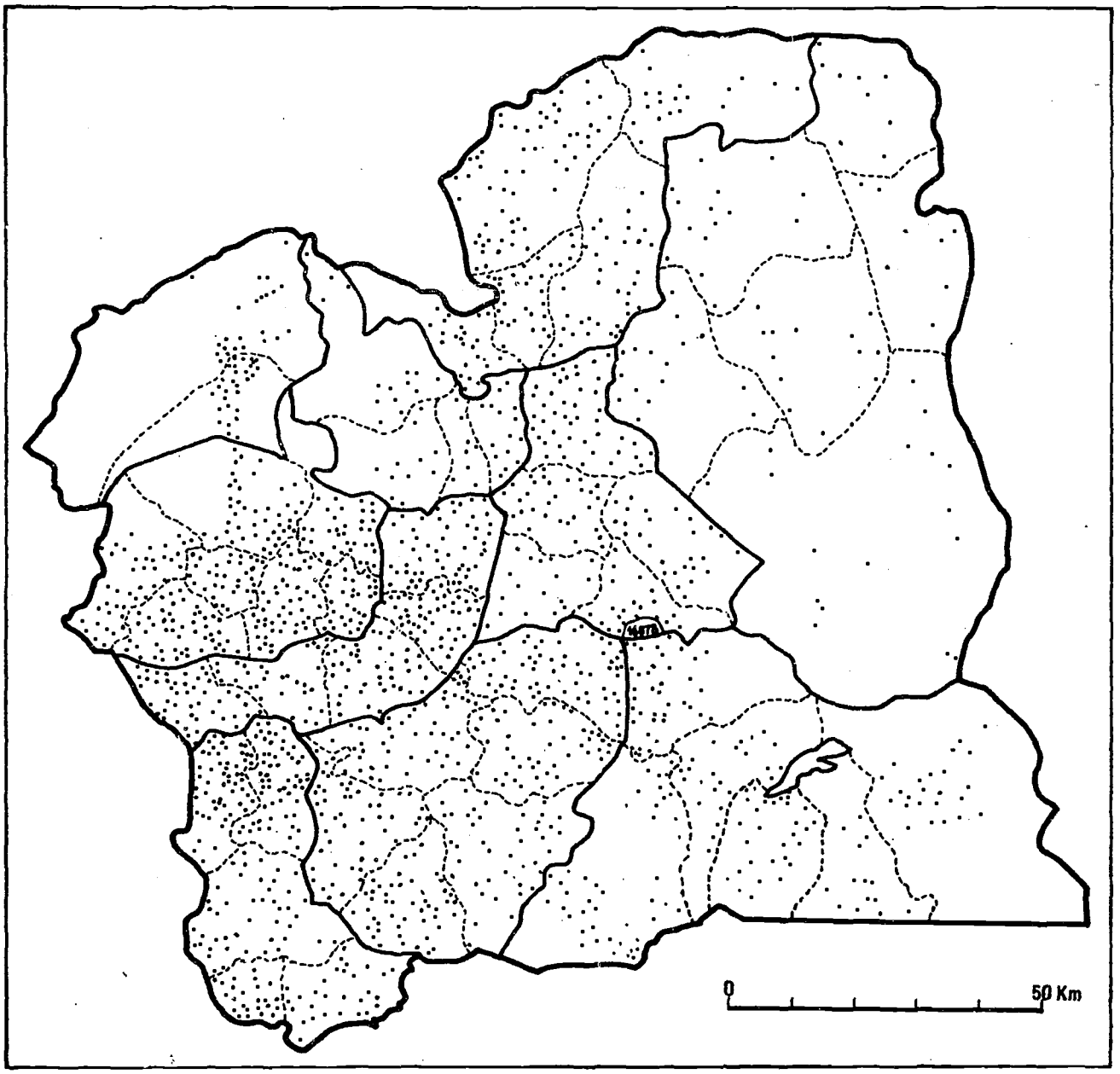
Buhweju County
50 Karunga
51 Bihanga
52 Rwengwe
53 Burere

Bunyaruguru County
60 Ryeru
61 Kichwamba

Kashari County
70 Rubindi
71 Rubaya
72 Kakika
73 Bubaare
74 Rwanyahemba

Kajara County
80 Ihunga
81 Ngoma
82 Bwongera
83 Kayonza
84 Rubaare

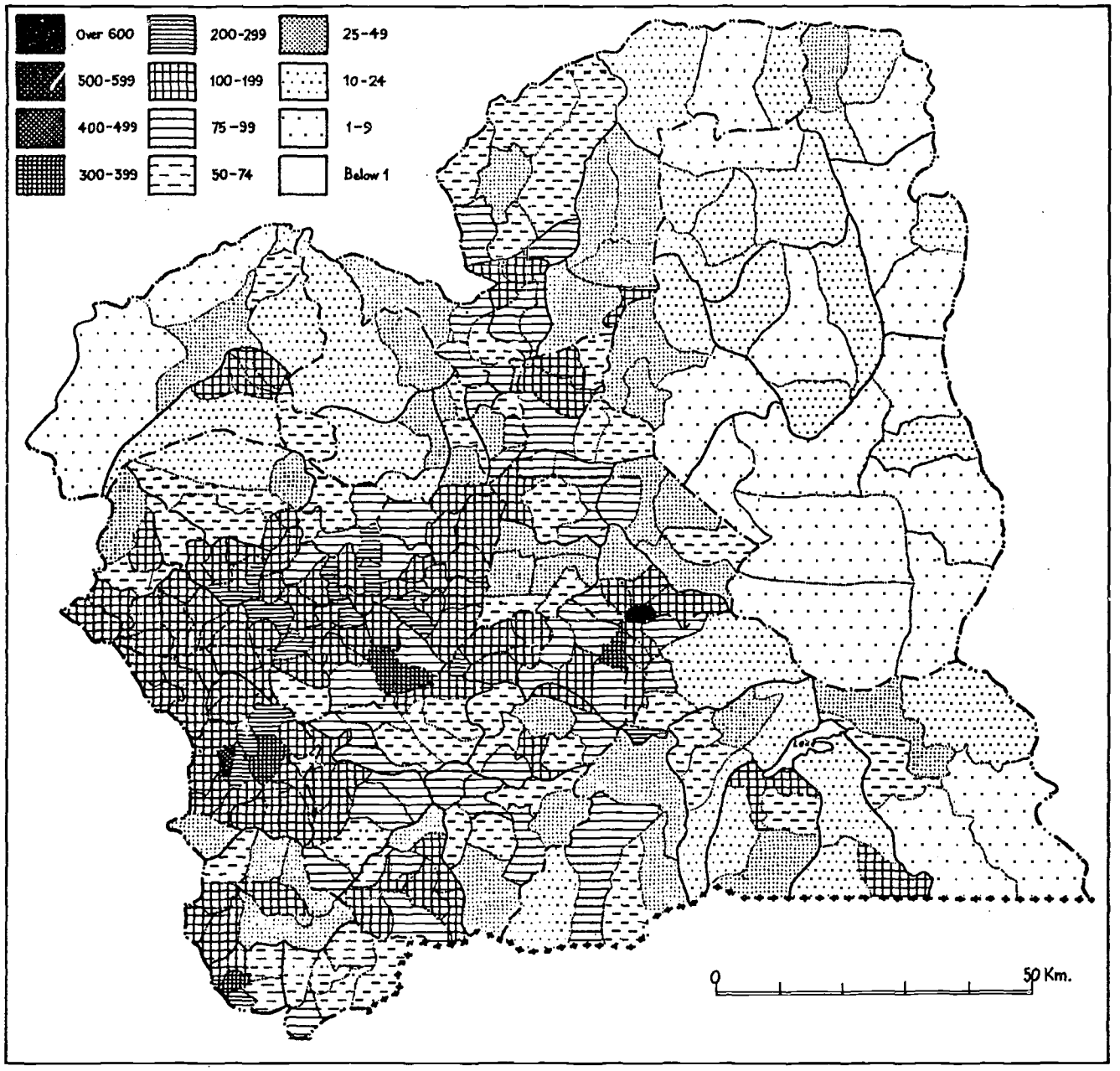
Isingiro County
90 Birere
91 Kabingo
92 Kikagate
93 Ngarama
94 Rugaga
95 Kashumba



MAP 4. *Population distribution in Ankole, 1969*

in paid employment in 1969.[1] The typical situation in the rural sector is of peasant farmers cultivating their own land or keeping their own cattle in family units. Most cash income is derived from the sale of coffee or bananas to food-deficit areas in Buganda, especially Kampala, and from tea recently introduced for out-grower and estate production in the wetter areas of Igara county. In the pastoral economy of the drier areas of the district there has been much less change in recent years and many of the Hima pastoralists continue to lead a life largely unaffected by twentieth-century innovations. There has been some development of beef ranching, especially with the eradication of the tsetse fly from large areas of Nyabushosi and the development of the Ankole Ranching Scheme.[2] Throughout the district there is a fairly elaborate system of rural markets connected with local exchange as well as external trade,[3] and there are more formally constituted service centres too.[4]

1. See Republic of Uganda, *Annual enumeration of employees*, Entebbe, Statistics Division, Ministry of Planning and Economic Development, 1970
2. See K. Peace, 'The Ankole ranching scheme' in *East African geographical review*, Kampala, 1966, (No. 4, pp. 62–65)
3. See C. M. Good, *Rural markets and trade in East Africa. A study of the functions and development of exchange institutions in Ankole, Uganda*, Chicago, University of Chicago, 1970 (Research paper No. 128)
4. See J. B. Splansky, 'Some geographic characteristics of permanent retail institutions in Ankole' in *East African geographical review* (No. 7, pp. 61–78)



MAP 5. *Population density per square kilometre in Ankole, 1969*

5. Transport and communications

The district is well served by roads. Those out of Mbarara eastwards to Masaka and Kampala, westwards to Bushenyi and Toro and south-westwards to Kigezi are bitumenized and most of the many minor motorable roads have an all-weather laterite surface so that even during the wettest periods they do not become impassable. There are relatively few parts of Ankole not within a few hours walk of a motorable road, and leading from such roads are innumerable minor tracks of varying quality. Most personal mobility is, however, on foot and the chief physical obstacles to

FIGURE 1. *(Opposite) The Ugandan educational system*

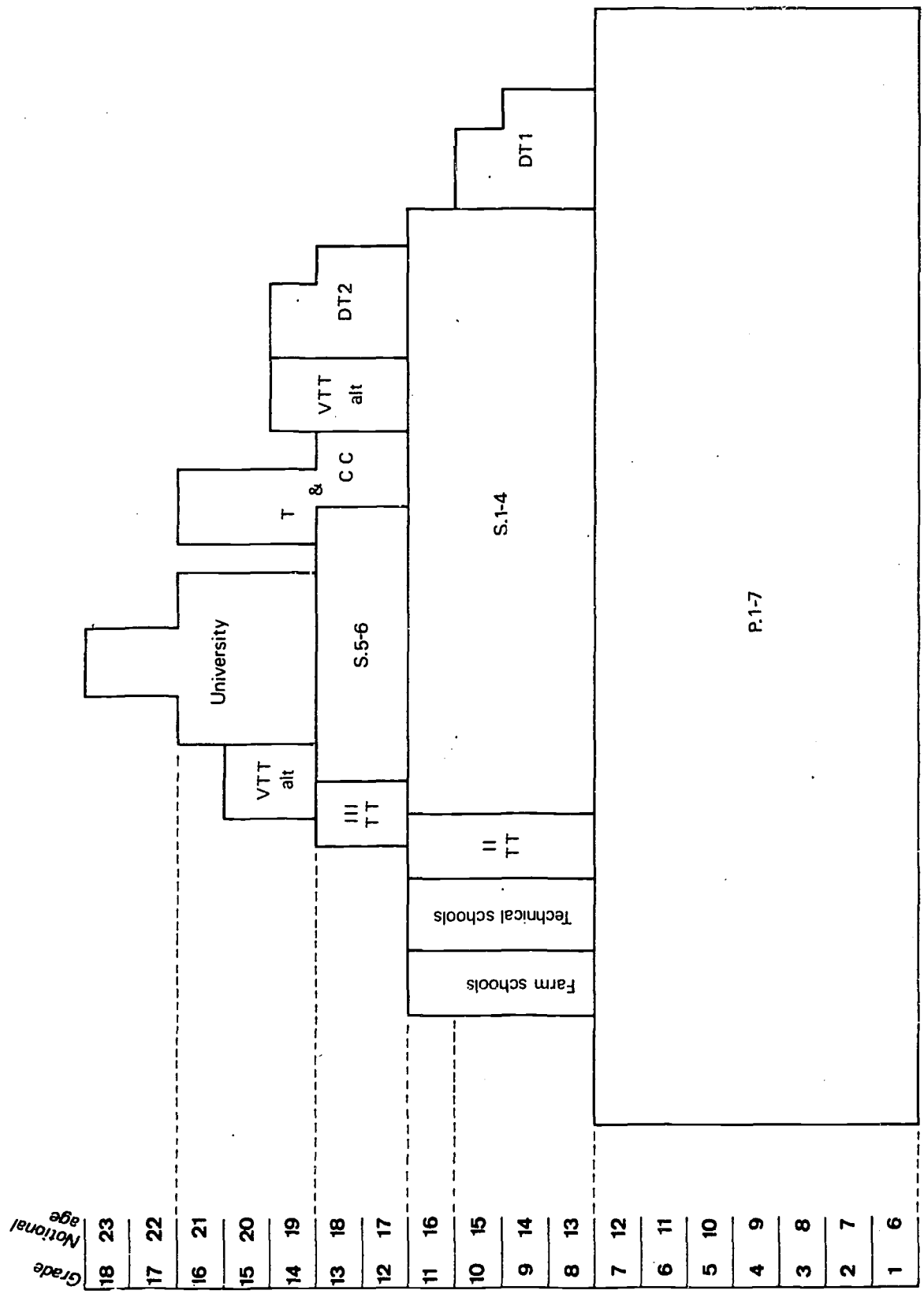
P = first level (primary); S = second level; TT = teacher training; T & CC = technical and commercial college; DT = departmental training (other formal government training); alt. = alternative.

NOTES 1. DT.1 includes training in such fields as nursing, community development, land surveying and agriculture.

2. DT.2 includes training in such fields as nursing, other medical, agriculture, veterinary, fisheries, community development, land surveying, co-operatives, laboratory technicians and librarians.

3. The technical and commercial colleges admit at grade S.6 both from their own courses and from general courses. This is reflected in the pyramid by an overlap.

SOURCE N. Bennett, 'Uganda: educational cost analysis', op. cit.


Grade
National age
18 23
17 22
16 21
15 20
14 19
13 18
12 17
11 16
10 15
9 14
8 13
7 12
6 11
5 10
4 9
3 8
2 7
1 6
University
VTT alt
III TT
S.5-6
T & C C
VTT alt
DT2
II TT
Technical schools
Farm schools
S.1-4
DT1
P.1-7

local movement are swamps, especially in the valley bottoms of the hilly counties of Shema and Igara. Bus services are few, irregular and very slow and a more popular form of transport on all the motorable roads is the shared taxi carrying eight people or more.

6. Education

The present structure of the formal education system in Uganda (Figure 1) has developed from the English model introduced in the colonial period. There is a seven-year first-level course (grades P.1–7) for which the notional entry age is six years, but which in practice varies considerably within any school. At the end of grade P.7 there is a national first-level leaving examination which is the sole criterion for selection for government second-level schools. Some pupils, who do not find a place in a government second-level school, may go to various vocational training institutions, teacher-training colleges, rural trade schools, etc., but the great majority leave school altogether. There is a four-year second-level course (grades S.1–4) to the 'O'-level examination for the East African Certificate of Education (EACE). A minority of pupils proceed to grades S.5 and 6 to take the 'A'-level of EACE as a requirement for university entrance. Most university students attend Makerere University in Kampala. Private schools follow the same structure and their pupils may sit the government first-level leaving examination for entry into a government second-level school or they may take the EACE as private candidates under the same conditions as pupils from government schools.

Table 1 summarizes enrolment by type of education in Uganda from 1966 to 1970. The highly pyramidal structure of the system, with a second level that is very much smaller than the first level, is immediately apparent. Drop-out rates within the first-level schools are very high and, of the 70–80,000 candidates in the first-level leaving examination, only about 12,000 find a place in government second-level schools. Despite the low first-level/second-level progression rate there is a very low enrolment in vocational and technical post-first-level education and this enrolment is not growing as fast as enrolment at other levels. The table indicates the importance of private second-level schools (enrolments in private first-level schools are not given but are known to be high) and shows that enrolment in registered schools grew at roughly the same rate as enrolment in aided schools, almost doubling over the period. This does not, however, take the enrolment in non-registered second-level schools into account and this period, 1966–70, saw a great mushrooming of such schools to the extent that enrolments in all private second-level schools may be as much as 50 per cent of the enrolment in government schools.

Formal education in Ankole began with the establishment of Mbarara High School by the Church Missionary Society in 1910.[1] Younger people were educated within the traditional social structure, and Mbarara High School was seen by the missions, and the rulers of what was then the Kingdom of Ankole, as an extension of the education

1. See T. Watson, *A history of Church Missionary Society high schools in Uganda, 1900-24; the education of a protestant élite*, University of East Africa, 1968 (Ph.D. thesis)

TABLE 1. Uganda: Enrolment by levels and types of education, 1966–70.

	1966		1967		1968		1969		1970		1966–70
	No.	%	No.	%	No.	%	No.	%	No.	%	incr.%
Aided first-level schools (P.1–P7)	633 546	94.38	641 639	93.53	632 162	92.33	709 709	92.64	720 127	91.72	13.66
Aided second-level schools (S.1–S.4)	20 003	2.97	25 180	3.67	29 540	4.31	33 453	4.36	37 477	4.77	87.07
Private registered second-level schools (S.1–S.4)	8 000[1]	1.19	8 592	1.25	11 601	1.69	10 516	1.37	13 932	1.77	74.15
Aided second-level schools (S.5–S.6)	1 545	0.23	1 845	0.26	2 097	0.30	2 471	0.32	3 220	0.41	108.41
Teacher-training colleges (grade II)	3 500		3 472		3 375		3 374		3 409		– 2.60
Teacher-training colleges (grade III)	362	0.61	423	0.62	530	0.62	570	0.56	674	0.56	86.18
National teachers college (grade V)	235		362		387		384		367		56.17
Technical schools	981		993		1 177		1 223		1 451		47.91
Farm schools (second-level)	506		528		541		573		368		–27.28
Rural trade and junior.farm schools	777	0.42	671	0.43	919	0.46	988	0.44	1 156	0.50	48.77
Uganda Technical College	410		461		320		267		568		38.53
Uganda College of Commerce	204		340		218		322		390		91.17
University of East Africa (Ugandans only)	1 190	0.17	1 467	0.21	1 779	0.25	2 172	0.28	1 949	0.24	63.78
TOTAL	671 259		685 973		684 646		766 022		785 088		16.95

1. Estimate
SOURCE: Planning and Statistical Unit, Ministry of Education, Kampala

provided in the royal court. In the other Bantu kingdoms of Uganda, Buganda, Bunyoro and Toro, the earliest schools were similar foundations catering particularly for the sons of chiefs. The White Fathers were the other missionary group to operate in Ankole and their first school was at the mission headquarters at Nyamitanga, also near the king's palace at Mbarara. Both Mission groups quickly extended their influence throughout the district and the rivalry between Catholic and Protestant in education, as in all other spheres of public life throughout Uganda, developed from an early date.[1]

The government of Uganda played no active part in education until the Education Department was established in 1925. Until then the missions had been the sole educational agencies. Even after the government department was established they continued to control education, not only in operating the schools, but in deciding the direction and volume of expansion of the school system. Initiative in establishing new schools or expanding existing ones was generally undertaken by these voluntary agencies or by parents acting in conjunction with the voluntary agencies. Some schools, especially second-level schools, received direct government aid and this aid grew rapidly, especially in the 1950s when the government, for the first time, established its own second-level schools. By 1964 the government had taken control of most schools and the category of government-aided schools was abolished. The finance and organization of all government schools was centrally controlled. Teachers' salaries were paid by the government, but the day-to-day running and staffing of the school usually remained with the missions. The apparent secularization of the educational system has, in practice, been less important to the individual school than might appear at first sight, but the government is now in a position to control the size and shape of the system.

Ankole is a backward district in educational provision. Out of nineteen districts, it ranks seventeenth for boys and fourteenth for girls aged 5–14 at school in 1969, with approximately 33 per cent of boys and 22 per cent of girls in school (Table 2). Recommendations have been made that would enable Ankole to catch up[2] and at present the district receives a share of Uganda's 'development teachers', a category designated to attempt to reduce the regional imbalances that exist, but Uganda is severely handicapped financially and expenditure on education is not increasing greatly—indeed it is probably decreasing per head of the total population in the school age group. The government is unable to expand its system as rapidly as it would want, but the private demand for schooling has led to a great increase in enrolments in private schools of all sorts. These private schools are part mission, part parents' schools, mostly in the lower grades of first-level education, but are in no way controlled by the government. This private sector affects the direction and rate of expansion of educational provision as a whole.

Enrolments and trends in Ankole are representative of Uganda as a whole. Enrolment in aided first-level schools rose from 39,082 in 1966 to 54,070 in 1969 and to over 61,000 in 1971, a growth-rate higher than the national average. Even if they were available, however, comparative figures for other levels of education could be misleading for many pupils from Ankole leave the district to go to schools elsewhere and other pupils from outside attend schools in Ankole; patterns of inter-district movement may change as new institutions are established in other districts. In 1966, as in 1970, there were six aided second-level schools in Ankole, three of which were newly established as second-level schools, and enrolment in these six has increased by over 50 per cent.

Despite interest in and a concern for educational development in Ankole, the prospects for educational development in the district do not seem encouraging. There is very rapid population growth and, associated with this, a very rapid increase in the school-age population, but increasing financial difficulties will place further restraint on the pace of expansion. For a variety of reasons the expansion of education must not be allowed to slow down and it is the purpose of this study to assess how great an expansion is required and, more specifically, where the new schools that are needed ought to be located to produce a rational school map.

TABLE 2. Percentage enrolments of 5–14 age group in Uganda, 1969.

District	Boys		Girls	
	%	Rank	%	Rank
East Mengo[1]	55.4	2	51.2	3
West Mengo	64.0	1	60.4	1
Masaka	50.9	4	48.1	4
Mubende	54.3	3	53.6	2
Bugisu	46.0	6	37.2	5
Bukedi	41.5	9	26.3	8
Busoga	40.7	11	30.9	6
Karamoja	5.7	19	2.0	19
Sebei	38.0	13	19.3	16
Teso	41.4	10	22.4	13
Acholi	42.7	7	24.2	11
Lango	46.2	5	24.3	9
Madi	37.4	14	17.9	17
West Nile	31.1	18	13.7	18
Ankole	32.8	17	22.2	14
Bunyoro	34.5	15	22.5	12
Kigezi	33.2	16	19.7	15
Toro	38.2	12	24.3	9
UGANDA	41.8	8	30.7	7

1. The districts listed are those which existed at the time of the census in 1969 and differ slightly from those in use at the time of the study, as illustrated in Map 1. East and West Mengo became East and West Buganda respectively and Acholi and Karamoja were each divided into two districts.

SOURCE: W. T. S. Gould, 'Patterns of lower school enrolment in Uganda', op. cit.

1. See F. B. Welbourn, *Religion and politics in Uganda, 1952–62*. Nairobi, East African Publishing House, 1965

2. See E. B. Castle, *et al.*, *Education in Uganda. The report of the Uganda education commission*, Entebbe, Government Printer, 1963

PART TWO
III. The first-level school system in Ankole

1. Existing network

The current first-level school map for Ankole has evolved over a period of sixty years without any co-ordinated planning of the spatial pattern of facilities or enrolments. The growth of the system has been the result of several competing interests, so that at the macro- and micro-scales there are inefficiencies and inequalities of educational opportunity and enrolment patterns.

The lowest level of formal education in Uganda is the first-level school, consisting essentially of two systems, government and private, operating in parallel. Both are adjusted to the same seven-year progression with all grade P.7 pupils taking the same first-level leaving examination for entry to government second-level schools. The organization and financing of the systems are, however, different.

The District Education Officer (DEO), directly appointed by the Ministry of Education in Kampala, is in charge of a system that is within the province of local government. The DEO and his assistants in the Mbarara office are the link between the government and the schools and their headmasters.

Although the Education Office is a branch of the Ankole District Administration, finance comes from the central government as well as local sources. Fees are charged at a standard national scale which ranges from 25 shs. per year for P.1 pupils to 100 shs. per year for P.7 pupils.[1] Although these fees seem to be at a relatively nominal level, they have the effect of introducing an element of socio-economic discrimination which affects the *incidence* rather than the *rate* of school attendance.[2] Considerable sacrifices are made to support children in school, but the income from fees does not even cover the non-teacher recurrent costs.[3] For Uganda as a whole, teacher costs per pupil per annum in first-level schools are £7.67, out of a total cost of £10.52, i.e. 73 per cent.[4] In 1971 there were 252 government first-level schools in Ankole with an estimated total enrolment of 61,195 pupils. Only 149 of these schools offer the full seven-year course with government support, but many of the others are complete schools in practice with completely private support for the non-government classes. Candidates for the national first-level leaving examination in 1971 were put forward by 176 schools.

There was an unknown number of private first-level schools in Ankole in 1971. Of the 512 officially registered in 1970, forty-three were directly controlled by the Church of Uganda, thirty-seven by the Roman Catholic church, four by Muslim authorities, and the remaining 428 were other schools almost entirely financed and founded by local parents, usually with religious backing. Although there are many more private schools than government schools, total enrolment for 1970 was estimated at 33,822 or about half that in government schools. This is because most of the private schools have classes at the lowest grades only. Eight schools presenting candidates at grade P.7 in 1971 were entirely privately supported, of which only one was a parents' school, five were schools for refugees financed through the Ministry of Culture and Community Development, one was a minor seminary of the Catholic Church and the other a school financed by the small but wealthy American Seventh Day Adventist Mission.

Private schools constitute the main area of expansion of enrolments at the present time. The government may be handicapped, but parents have sufficient money to create a private demand for first-level education. The District Education Office does not discourage the growth of the private system.

The relationship between the government and non-government systems is very blurred in the public mind. With very few exceptions all first-level schools began as private schools. Buildings were often constructed of local materials using local voluntary co-operative labour, and local effort has financed other capital and recurrent expenditures. The government system has expanded by incorporating private schools within its financial structure, with the very large and important item of teachers' salaries then being paid by the government. There is very considerable pressure for private schools to be taken over by the

1. The Ugandan currency consists of shillings and cents: 1 sh. = 100 cents. The rate of exchange in 1972 was US $1 = 7.14 shs.
2. The *incidence* of school attendance refers to whether or not an individual child in any community will attend school; the *rate* of school attendance is the proportion of the relevant age group in the community, as a whole, attending school.
3. See. N. Bennett, 'Uganda: educational cost evaluation', op. cit.
4. See Republic of Uganda, *Education statistics, 1967*, Kampala, Ministry of Education, 1958 (mimeo).

government for, since private resources are usually insufficient to support the salaries of qualified teachers, it is likely that a take-over will result in an improvement in the quality of teachers. An unqualified teacher who has completed grade P.7 can expect to earn 210 shs. per month; but a P.7 graduate with four years of teacher training (a grade III teacher) will have 346 shs. per month. The holder of an East African Certificate of Education with no teaching qualification will earn 315 shs. per month, but a certificate holder with two further years of teacher training (grade IV or grade V) will earn 500 shs. per month. Teacher costs therefore vary greatly and private parents' schools have very few qualified teachers.

Many schools are, in fact, mixed private and government schools. Nineteen schools have privately-supported P.7 classes, but government support for the rest of the school. The present policy of the DEO is to up-grade all present government schools to a complete grades P.1–7 system, before extending government support to existing completely private establishments. The extension of government control to private schools does not necessarily eliminate the problems that it is often claimed to eliminate. The school will very often retain its private indentity, e.g. a church school with all the prejudices that denominational rivalry has introduced, and parents will continue to identify with the school they have helped to build by helping in further building or contributing to the building fund. Local feeling with regard to particular schools is often one of intense interest and pride and the introduction of government control is not, therefore, as easy as might be thought.

2. Data availability

Any study of education at the district level in Uganda is faced at the present time with a serious deficiency of even the most elementary statistics.

A. THE NUMBER AND DISTRIBUTION OF SCHOOLS

There is no definitive map of the distribution of government first-level schools in Ankole. A map was compiled by the present writer with the aid of the District Inspector of schools, but many school locations are far from exact. There is no detailed knowledge of the distribution of private schools in the district as a whole and the compilation of a definitive map of the distribution of facilities is therefore impossible.

B. ENROLMENTS

Each government school is obliged to make an annual statistical return, in the first instance to the DEO. This return is compiled into district figures and these and the individual returns are forwarded to the Ministry of Education in Kampala. The statistics include enrolments by grade and sex, the qualifications of teachers, and number and quality of buildings. Statistics on district enrolments by grade are available for many years from annual reports of the Ministry of Education, but the first published statistics below the district level were the enrolments by county and grade in the statistical publications of the Ministry of Education for 1964–67. Since then there has been a major breakdown in the statistical services of the ministry and no statistical reports have been published. It is hoped that this deficiency will be rectified during 1972. Statistics for 1968–71 were collected by the Mbarara office and returns and district aggregates forwarded to Kampala, but there are no statistics of enrolment in government first-level schools by *gomborora*.

C. CENSUS DATA

There were questions in the 1959 and 1969 censuses on the educational status of those enumerated. The data on present and completed education were collected in a 10 per cent sample census. The censuses were constructed in such a way that statistics on educational status at *gomborora* or even county level are not available, so that, while aggregate educational statistics for Ankole can be seen and inter-district comparisons made (Table 2), the distribution within each district is not known.

D. AGE

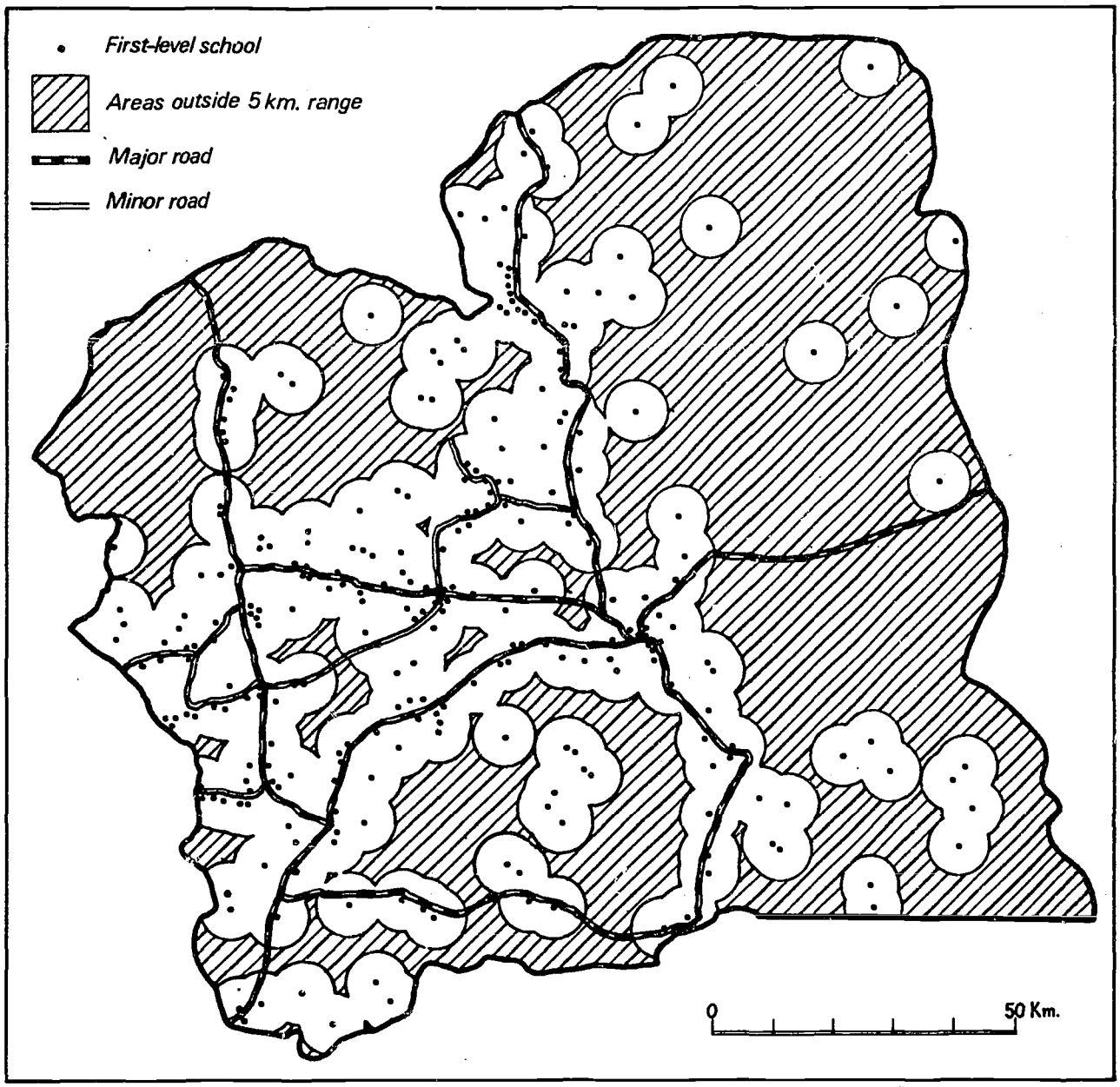
The notional age-range for first-level school is 6–12, but the actual age-spread is much wider than this and may extend for P.1 pupils from 5–12 and for P.7 pupils from 12 to over 20. Obtaining accurate age data is a major problem for any population investigation in Uganda. Progress through the system is by no means regular, with very considerable drop-out and repeater rates in Uganda as a whole,[1] and there is no reason to believe that Ankole is significantly different from the national picture in this respect. Since actual age is not certain, there is relatively little intrinsic value in attempting to estimate enrolment ratios by relating enrolments to the notional age of the population. Indices will have relative rather than absolute significance.[2]

Basic data for the compilation of an accurate school map are therefore lacking. There are many important gaps for important indices such as enrolment ratios, the distribution of schools, etc., which can be arrived at only by using proxy measures.

3. The present distribution of educational opportunity

An analysis of the present first-level school map in Ankole must consider patterns of enrolment and provision at two levels—the macro-scale of the district as a whole and the micro-scale at the local level. Only by considering both of these can a picture of present circumstances be of value in projecting a more rational school map.

1. See R. Jolly, *Planning education for African development*, Nairobi, East African Publishing House, 1969 (Makerere Institute for Social Research, East African Studies, 25, p. 69).
2. Even if the actual age is not certain, there is still some value in comparing enrolments with the official age of the population. As mentioned by the author, the apparent enrolment ratios can serve to some extent as indicators of the level of development of the school system. (IIEP)



MAP 6. *Distribution and range of government first-level schools and private schools with P.7 in Ankole, 1971*

A. MACRO-SCALE

Map 6 illustrates the distribution of government first-level schools in Ankole in 1971, together with the eight private first-level schools that had P.7 classes in that year. It also indicates those areas of the district over 5 km from these schools and therefore outside their effective catchment area.[1] As would be expected, there is a concentration of schools in the densely-populated counties of the western part of the district, while the sparsely-populated counties have large areas more than 5 km from a school. Schools tend to be situated near the main roads, as is exemplified along the road north through Bunyaruguru and the road south from Mbarara through Isingiro and Rwampara. Relief is important in affecting the distribution of schools only at the local level in so far as it affects the distribution of population and settlement and the pattern of communications.

The only available data on the patterns of enrolments within Ankole, including both government and private first-level schools, is derived from a survey undertaken by the DEO in 1969 (Table 3). The estimates of enrolment in

1. See page 32

TABLE 3. Enrolment in first-level schools and population by county, 1969.

	Enrolments			Percentage in government schools	Percentage enrolments			Percentage of district population
	Government schools	Private schools	Total		Government schools	Private schools	Total	
Shema	8 571	5 912	14 483	59.2	15.85	19.73	17.24	13.39
Rwampara	8 866	3 892	12 758	69.5	16.40	12.99	15.19	17.16
Mitoma	5 992	2 493	8 485	70.7	11.08	8.32	10.10	9.38
Nyabushosi	1 455	1 889	3 344	43.5	2.69	6.36	3.98	4.32
Igara	9 271	5 859	15 130	61.3	17.15	19.56	18.01	16.25
Buhweju	1 931	685	2 616	73.8	3.57	2.29	3.11	2.95
Bunyaruguru	1 467	547	2 023	73.2	2.72	1.83	2.41	3.13
Kashari	5 760	2 044	7 804	73.8	10.65	6.82	9.29	9.97
Kajara	5 725	3 797	9 522	60.1	10.59	12.67	11.33	11.97
Isingiro	5 023	2 840	7 863	63.9	9.29	9.48	9.36	11.47
ANKOLE	54 070	29 958	84 028	64.4	100.0	100.0	100.0	100.0

SOURCE District Education Office, Ankole

private schools are inevitably very crude and probably underestimates. When these data are related to the distribution of population by county for that year, it becomes clear that educational opportunity is not evenly distributed throughout the district. Shema, Mitoma, Buhweju and Igara are relatively well served and enrolments in the other six counties are below the expected level, with the greatest percentage discrepancy between population and enrolment in Bunyaruguru.

Data on teacher qualifications and enrolments by sex and grade, officially collected early in 1971, had been sent to Kampala and were not available for this report. During November 1971 data on enrolments for that year were collected by a postal questionnaire to each of the 252 government schools.[1] While these data cannot provide a definitive statement of the complete pattern of enrolments or accurate estimates of enrolment ratios, they can provide the distribution of enrolments in P.7.

Table 4 outlines the distribution of P.7 enrolments by *gomborora*. The enrolments are expressed as a percentage of the population aged 10–14. This broad age-band lies to either side of the notional age of 12 years and the resulting index is not therefore an absolute indication of the enrolment ratio, but it enables a comparison of *gombororas*. The comparative (but not absolute) value of the index necessitates the ranking of the fifty-one *gombororas* and these ranks are mapped in quintiles (Map 7).

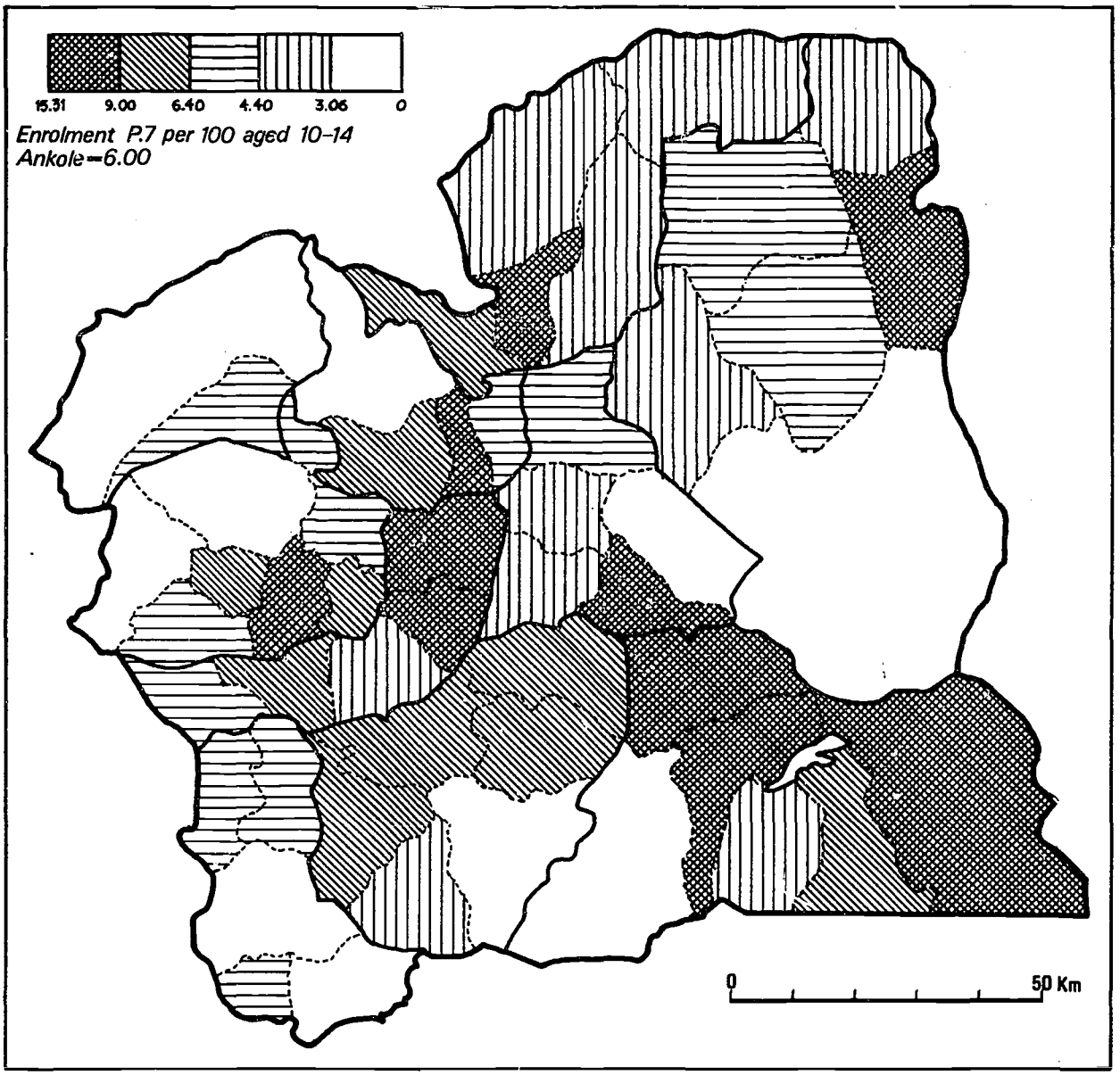
The distribution illustrated in this map does not have a clearly differentiated spatial pattern. Of the ten *gombororas* with the highest grading, three are in Isingiro, two in Shema and one each in Mitoma, Nyabushosi, Igara, Buhweju and Kashari, but many of these can be attributed to local factors. Kakika in Kashari contains Mbarara town schools; Nyabuhikye in Mitoma, Kinoni in Nyabushosi and Rwengwe in Buhweju are the leading *gombororas* in their respective counties; they are near the county headquarters and early Mission endeavour was concentrated near the Mission stations at these focuses. The schools there serve not only the local population of the immediate hinterland but also pupils attracted from other *gombororas* who move from their homes to live with relatives near the school during term-time. Movement away from home to attend first-level school is a relatively common feature throughout Uganda, especially at grade P.7.

The other local characteristic that stands out is the high enrolment in the three *gombororas* of Isingiro. These are the *gombororas* in which there are Rwandan refugee settlements and the Ministry of Culture and Community Development, which administers these settlements, has been able to provide five schools with grades P.1–7, so that the provision for these refugees is very much better than for the indigenous population. The contrast is particularly marked in the comparison of these three *gombororas* with the very poorly-served neighbouring *gomborora* of Kikagate.

In the lowest grading, there are three *gombororas* with no P.7 classes (Table 4) and the others in this group have a variety of conditions, from the relatively densely-populated cultivating *gombororas* of Kyamahunga and Bitereko in Igara, to the relatively sparsely-populated herding *gombororas* of Ngoma and Rubaare in Kajara. The difference within Igara between Kitsibo (ranked fifth overall) and the two low-ranked *gombororas* provides further support for the existence of inter-*gomborora* movement to first-level schools, with pupils attracted to the many schools near Bushenyi and Ishaka.

The picture of the distribution of educational opportunity at the *gomborora* level is in some respects confused by the daily movements across *gomborora* boundaries, as well as longer-term movements from home to school. The influence of both of these will be less at the county level, where, in order of importance, the counties are ranked: Shema, Mitoma, Isingiro, Buhweju, Rwampara, Igara, Kashari, Nyabushosi, Kajara and Bunyaruguru. This confirms the pattern given by the private and government enrolments in 1969 (see Table 3, above) with Shema, Mitoma, Buhweju and Rwampara relatively well-off and Bunyaruguru the least well provided. The discrepancy between the two sets of figures is greatest for Isingiro, where the five refugee schools introduce exceptional circumstances.

1. Returns were obtained from about 90 per cent of the schools. Estimates of thirty-five pupils per P.7 class were made where the actual enrolment was not known.



MAP 7. *Apparent enrolment ratio in P.7, quintile groups*

The present first-level school map is largely, but not entirely, a reflection of the distribution and intensity of demand for education. Independent of any sociological differences between one area and another, demand will be greater in areas with high population densities than in areas with low densities, for there will be more children within reach of a school. The effects of variation in population densities are intensified by differences in demand for education between the pastoral and cultivating sections of the population. Demand for schooling, as measured by *willingness* rather than *ability* to pay school fees, has, for a variety of reasons, been shown to be lower amongst the pastoral groups than amongst the cultivators.[1] In a mixed community this will affect the incidence of attendance, but may affect enrolment rates in the district as a whole.

B. MICRO-SCALE

A complete analysis of present patterns of first-level school enrolment cannot be derived from the general situation in the district, as described above. Clearly a more rational school map would improve the provision in Bunyaruguru relative to Shema, but more general factors such as the role

1. See C. Murray, 'Status conflict: cattle and education in Ankole' in *Uganda Journal*, Kampala, 1970 (Vol. 34, No. 1, pp. 1–14)

TABLE 4. P.7 enrolments by *gomborora*, 1971

County	*gomborora*	No. of P.7 classes	P.7 enrolment	Enrolment per 100 aged 10–14	Order
Shema	Kabira	4	147	4.75	29
	Kagango	9	377	13.51	3
	Shuku	2	80	3.06	40
	Kigarama	6	248	6.41	20
	Kitagata	5	222	9.67	10
	TOTAL	26	1 074	7.32	
Rwampara	Ndeiza	5	242	7.37	15
	Rugando	7	283	7.35	16
	Ntungamo	5	233	6.85	17
	Bugamba	6	237	7.98	12
	Ruhama	3	98	3.15	39
	Rukoni	3	83	3.05	41
	TOTAL	29	1 175	6.08	
Mitoma	Bisheshe	5	144	4.25	32
	Kanoni	3	88	3.75	35
	Buremba	1	22	4.13	33
	Nyabuhikye	9	357	15.31	1
	Rukiri	3	127	7.39	14
	TOTAL	21	738	7.15	
Nyabushosi	Nyakasharara	—	—	—	48
	Kenshunga	1	36	5.04	27
	Kazo	1	49	4.68	30
	Kinoni	2	63	13.66	2
	Kashongi	1	35	3.51	37
	Burunga	1	29	3.15	39
	TOTAL	6	212	4.80	
Igara	Kitsibo	9	388	12.14	5
	Kyabugimbi	3	71	4.98	28
	Nyabubaare	4	149	6.76	18
	Mitooma	7	200	5.87	23
	Kyeizooba	4	156	7.48	13
	Kyamahunga	2	70	2.77	42
	Bitereko	2	51	1.77	47
	TOTAL	31	1 085	5.85	
Buhweju	Karunga	2	60	5.51	25
	Bihanga	1	24	2.50	45
	Rwengwe	2	85	12.27	4
	Burere	1	49	6.69	19
	TOTAL	6	218	6.27	
Bunyaruguru	Ryeru	4	104	6.29	21
	Kichwamba	—	—	—	48
	TOTAL	4	104	3.45	
Kashari	Rubindi	4	127	4.42	31
	Rubaya	—	—	—	48
	Kakika	7	315	12.01	6
	Bubaare	1	45	3.66	36
	Rwanyahemba	2	77	4.01	34
	TOTAL	14	564	5.51	
Kajara	Ihunga	5	221	5.85	24
	Ngoma	2	49	2.62	44
	Bwongera	6	190	5.13	26
	Kayonza	3	105	6.02	22
	Rubaare	3	87	2.70	43
	TOTAL	19	652	4.55	

TABLE 4. Continued

Isingiro	Birere	6	282	10.87	8
	Kabingo	4	140	10.06	9
	Kikagate	2	68	1.80	46
	Ngarama	2	70	3.38	38
	Rugaga	5	168	11.45	7
	Kashumba	3	100	8.21	11
	TOTAL	22	828	6.61	
ANKOLE		178	6 651	6.00	

SOURCE IIEP questionnaire

of variations in population density or socio-economic conditions must be taken into account. Balanced discussion of these factors affecting the pattern of enrolments needs to be complemented by some knowledge of the situation at the micro-scale (local) level.

In the Ugandan context it would be a reasonable hypothesis that, where first-level schools are day schools and where there are no public transport facilities in rural areas to take children to school, the rate of first-level enrolment is affected by population density. The number of potential pupils within daily travel distance will increase as the population density increases, given that there is a maximum walking distance, i.e. the effective range of a first-level school. The minimum *threshold* enrolment (the minimum enrolment at which a school will function efficiently) will be reached more easily where population densities are great.

There is a positive relationship between population density and P.7 enrolments in Ankole. The value of Spearman's rank correlation coefficient for the fifty-one *gombororas* is .33, and for the ten counties .43, but neither is statistically significant even at the 1 per cent level. It may be that the local circumstances discussed above have distorted the relationship; ease of movement of pupils from their home in order to live near a school and the concentration of Mission schools in favoured areas will clearly affect any linkage between population density and enrolment. An important effect of the relationship would seem to be on class size, for in Shema the average P.7 class is 41.3 pupils, but 35.3 in Nyabushosi, the average for Ankole being 36.1. A lower class-size is clearly less efficient as a consumer of scarce financial and personnel resources and is related to notions of what the minimum acceptable threshold should be. The nature of the problem has been hinted at:

> 'Uganda seems to have been plagued with the problem of classes below the optimum size more severely than other countries. The World Bank report suggested that at primary levels this was partly the result of different missions establishing rival schools in the same area. Others have attributed it to high wastage rates resulting from an inability to pay school fees, or from the allegedly more dispersed populations of Uganda.'[1]

The main reason for investigating patterns of educational opportunity at the micro-level is to determine the catchment area of a first-level school and factors affecting the distance travelled to school. Since it is hypothesized that population density is crucial in the relationship between range and threshold, the investigations need to be carried out in areas of differing population densities where there are also differences in socio-economic conditions.

Detailed surveys of educational provision and enrolment were made in three *gombororas* of Ankole in November 1971. Table 5 summarizes the relevant conditions in these areas.

TABLE 5. Comparison of sample *gombororas*

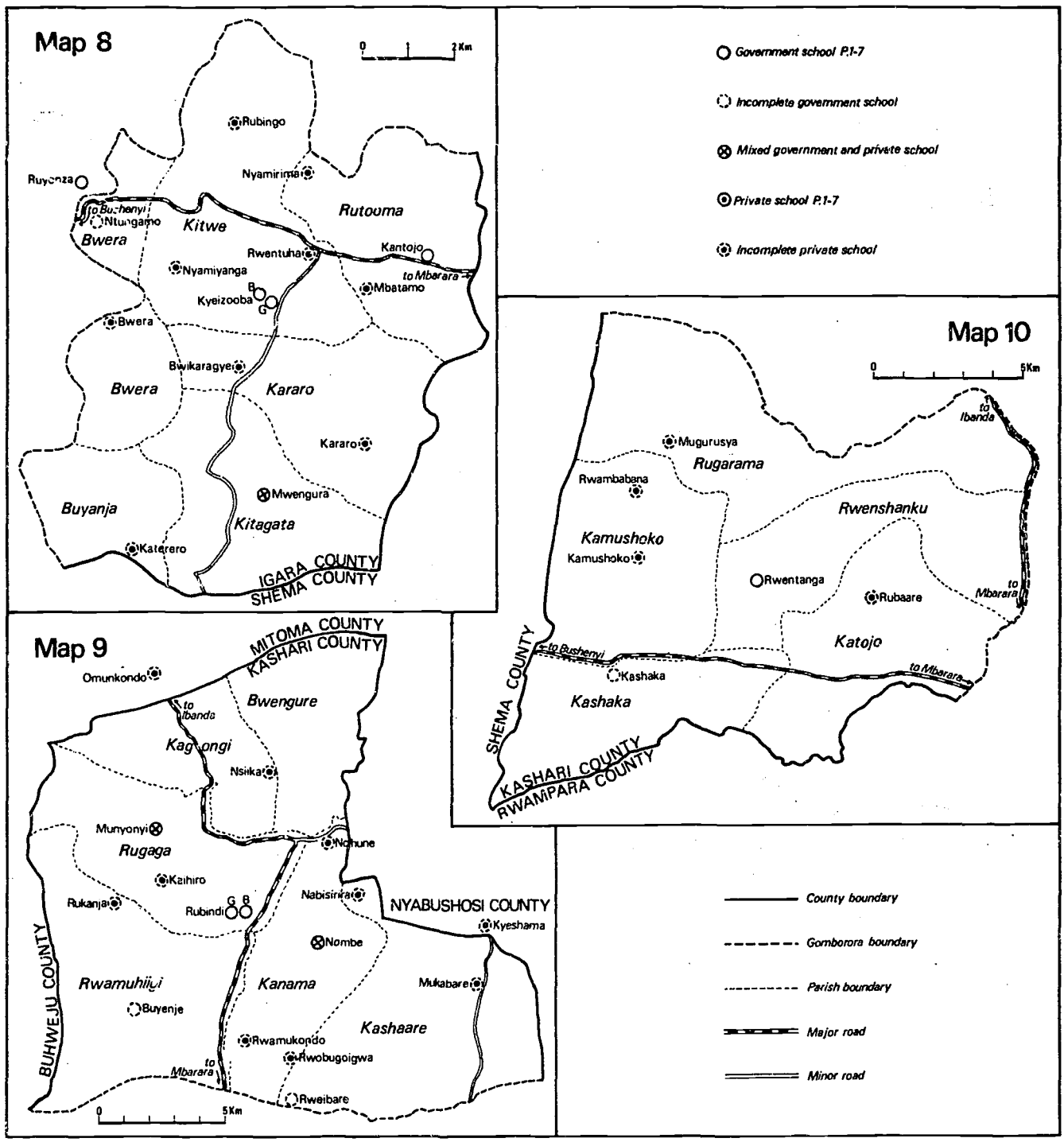
	Bubaare	Rubindi	Kyeizooba
County	Kashari	Kashari	Igara
Area (km²)	200	263	83
Population 1969	9 036	22 551	15 244
Density (per km²)	45	86	181
Population 1959	5 429	7 945	12 680[1]
Density (per km²)	26	30	—[1]
Percentage growth p.a. 1959–69	5.2	11.1	—[1]
Principal economic activity	Herding	Cultivation	Cultivation
No. of P.7 schools	1	4	4
No. of P.1 schools	6	14	14

1. Boundary change makes comparison invalid.
SOURCE IIEP survey

i. Kyeizooba gombororo (Map 8)

Kyeizooba is situated in the south-eastern corner of Igara county and its boundary with Shema to the west is a wide swamp across which there are few paths and only one road—the main Mbarara/Bushenyi road, which passes through the *gombororo*. The main minor road is an all-weather laterite road leading south from the main road at Rwentuha, past the *gombororo* headquarters near Kyeizooba Boys' and Girls' schools into Shema county. The economy of the *gombororo* is based on a food-crop complex of bananas, millet and sweet potatoes, with coffee grown as a cash crop. The relief is very hilly with swampy valley bottoms and the fairly steep hillsides are intensively cultivated by family groups. Settlement is very dispersed and

1. See R. Jolly, op. cit., p. 76



MAPS 8, 9 AND 10. *First-level schools in Kyeizooba, Rubindi and Bubaare gombororas*

W. T. S. Gould

The landscape of Rubindi gomborora.

W. T. S. Gould

The landscape of Bubaare gomborora. A few buildings on a slight hilltop with no other settlements in sight constitute Rwentanga first-level school, which is the main school in this gomborora.

W. T. S. Gould

Kyeizooba Girls' school is a well-established brick-built construction.

W. T. S. Gould

W. T. S. Gould

A half-completed building and the P.1/2 classroom built by traditional methods at Kashaka first-level school in Bubaare gomborora.

there are few recognized central places. There are a few shops in Rwentuha but no modern health facilities, the nearest health centre being at Bushenyi, some 10 km from the *gomborora* headquarters. Most of the population profess adherence to the Church of Uganda and the main church is near Kyeizooba Girls' school. There is no large Catholic church in the area.

Kyeizooba is the second most densely populated *gomborora* in Ankole with densities of 245 per square km in Bwera parish, 209 in Rutooma parish, 201 in Kitagata, 190 in Kararo, 151 in Kitwe and 138 in Buyanja. The birth rate is high and the large excess of females over males in the 20–35 age group (see Table 12, page 40) indicates that it is an area of heavy out-migration of males as labour migrants. Due to boundary changes between 1959 and 1969 that took part of Buyanja parish from Kyeizooba to Kitsibo, direct comparison of the 1959 to 1969 *gomborora* densities cannot be made and there are suspicions of an under-count in 1959. However, it may be that population has declined throughout the inter-censal period and, certainly, any increase would be small. All these demographic indicators and the high percentage of the area that is a permanent swamp, point to a land shortage that would stimulate out-migration of family groups to other areas.

ii. Rubindi gomborora (Map 9)

Rubindi is the northernmost *gomborora* of Kashari lying at the foot of the Buhweju escarpment which forms Rubindi's western boundary and rises to over 2,100 metres at Isingiro Peak in the north-west at the Buhweju/Mitoma/Kashari boundary. The general altitude of the *gomborora* is about 1,500 metres and relative relief is less severe than in Kyeizooba with more gently sloping land and less extensive swamp in the valley bottoms. The laterite all-weather road from Mbarara to Ibanda runs from south to north through the *gomborora*. Rainfall is less than further west and there are more cattle, but the chief economic activity remains cultivation with the banana/coffee complex dominant. At Rubindi on the main road near Rubindi Boys' and Rubindi Girls' schools there are a few shops and the *gomborora* headquarters. Both Catholic and Protestant missions have been active in the area, with the main concentration of Catholic activity to the west of the main road and the Protestant to the east of it.

Population densities are considerably lower in Rubindi than in Kyeizooba and variation within the *gomborora* is greater. The three parishes to the west, Rwamuhiigi (92 persons per km²), Kagongi (115 per km²) and Rugaga (111 per km²), have higher densities than the eastern parishes of Kashaare (70 per km²), Kanama (72 per km²) and Bwengure (60 per km²). The most important demographic feature is that the population grew at an average rate of 11.1 per cent per annum between 1959 and 1969 and in-migration continues on a large scale. Most migrants have come from Igara, Shema and Buhweju to cultivate this relatively empty area where physical conditions are suitable, especially in the wetter, western parishes at the foot of the Buhweju escarpment.

iii. Bubaare gomborora (Map 10)

Bubaare lies astride the Mbarara/Bushenyi road in south-western Kashari and is separated from Shema to the west and Rwampara to the south by considerable areas of swamp across which there are no paths. It is a pastoral area with scattered plantations of bananas near settlements and also in especially favoured areas, with a greater frequency in Kamushoko parish in the west where rainfall is probably higher. The landscape is gently rolling and open with excellent grazing for the large herds of Ankole long-horned cattle found in the area. Apart from cattle dips and schools, social provision is completely absent and there have been fewer changes in economic and social structure within the last 100 years than in Kyeizooba or Rubindi.

This is a very sparsely-peopled area with an average density of 45 per km², with Kashaka (55 per km²) the most densely populated parish and Kamushoko (34 per km²) the least densely populated. The inter-censal annual rate of growth was 5.2 per cent, which is similar to the Ankole average. Sex ratio and birth rate are also near the average for Ankole and support the view that this is an area of relatively stable population with a low net in-migration adding to the high rate of natural growth.

iv. P.1 and P.6 catchment areas

The distribution of educational facilities by type was illustrated in Maps 8, 9 and 10 and is summarized in Table 6. Differences in the extent of provision are immediately apparent. Kyeizooba and Rubindi have almost exactly the same provision—fourteen schools and four P.7 classes—but the population of Kyeizooba is only two-thirds that of Rubindi. Bubaare with two-thirds the population of Kyeizooba and about 40 per cent that of Rubindi has only six schools and only one P.7 class.

A questionnaire survey was conducted in each of the government schools in the three *gombororas* (with the exception of Buyenje in Rubindi). With the aid of an interpreter, each child in P. 1 and P. 6 was asked a series of questions. The P.1s were chosen to provide an indication of patterns of enrolment at the lowest level. The highest level had to be represented by P.6, since P.7 were engaged in the final stages of preparation for the all-important first-level leaving examination at the time of the survey. A total of 722 pupils were interviewed. Each interview lasted less than five minutes and it was generally possible, working in two groups, to cover P.1 and P.6 at one school in one day.

The main purpose of this exercise was to ascertain the location of the pupil's home. This was done using the one km grid of 1:50,000-scale maps of the areas. It was impossible to pinpoint the homes with greater accuracy than one km² for two reasons:

a) The vagueness and inability of the pupils to describe accurately the distance and direction of the home/school journey. The interpreters were well versed in map-reading and tried to lead the pupils through to a satisfactory explanation.
b) The maps themselves were not accurate either in their indications of the distribution of settlements or, even more seriously in this case, in the positioning of place names on the map.

TABLE 6. Sample *gombororas*: first-level schools.

School	Classes	Government classes	Private classes	Foundation body
Kyeizooba				
Kyeizooba boys	2 × P.1, 2–7	1–7	1	C.O.U.
Kyeizooba girls	2 × P.1, 2–7	1–7	1	C.O.U.
Kantojo	1–7	1–7	—	R.C.
Mwengura	1–7	1–6	7	C.O.U.
Ntungamo	1–5	1–3	4, 5	R.C.
Rwentuha	1–5	—	1–5	C.O.U.
Kararo	1–4	—	1–4	C.O.U.
Nyamirima	1–4	—	1–4	C.O.U.
Bwera	1–4	—	1–4	C.O.U.
Rubingo	1–2	—	1–2	C.O.U.
Katerero	1–2	—	1–2	R.C.
Nyamiyanga	1	—	1	C.O.U.
Mbatumo	1	—	1	C.O.U.
Bwikaragye	1	—	1	C.O.U.
Rubindi				
Rubindi boys	1–7	1–7	—	R.C.
Rubindi girls	1–7	1–7	—	R.C.
Nombe	1–7	1–6	7	C.O.U.
Munyonyi	1–7	1–6	7	R.C.
Bunyenje	1–5	1–5	—	C.O.U.
Rweibare	1–5	1–2	3–5	C.O.U.
Nsiika	1–4	—	1–4	R.C.
Rukanja	1–3	—	1–3	C.O.U.
Kaihiro	1–3	—	1–3	R.C.
Rwamukondo	1–2	—	1–2	R.C.
Nyabisirira	1–2	—	1–2	C.O.U.
Rwobugoigwa	1–2	—	1–2	C.O.U.
Nchune	1–2	—	1–2	R.C.
Mukabare	1–2	—	1–2	C.O.U.
Bubaare				
Rwentanga	1–7	1–7	—	C.O.U.
Kashaka	1–6	1–2	3–6	C.O.U.
Kamushoko	1–2	—	1–2	C.O.U.
Rubaare	1–2	—	1–2	C.O.U.
Mugurusya	1–2	—	1–2	C.O.U.
Rwambabana	1–2	—	1–2	C.O.U.

C.O.U. = Church of Uganda (Protestant); R.C. = Roman Catholic.
SOURCE IIEP survey

It was assumed, however, that locations decided upon were accurate to within the same grid square as the true locations.

Amongst supplementary information gathered for each pupil were:

a) Average travel time. This acted as a check in the location search and was of considerable value at the time of the questioning.
b) Religious affiliation of the pupil.
c) If a P.1 pupil, which school would be his or her choice for P.6 (in most cases the same school, but valuable in schools that had no P.6 class); and if a P.6 pupil, where had he or she attended P.1?
d) Parents' home, if different from the pupil's term-time residence.

The location of each home was plotted and, for each school for P.1 and P.6 (where it existed), a histogram of numbers of pupils at various distances was compiled. The distances are not exactly grouped by linear measures since the manner in which the locations had to be plotted necessitated the grouping of squares within the grid pattern. The square where the school stood and the eight surrounding it were group 1, the rows and columns surrounding this central block became group 2, and so on. The histograms are displayed (Figures 2 and 3) in a form that enables comparison within and between *gombororas*.

The histograms of P.1 enrolments indicate that only in a very few schools do pupils travel from beyond 5–6 kms. In Kyeizooba and Bubaare, no school has pupils from further than this and Mwengura attracts from groups 1–3 only, i.e. less than 4 km. All Rubindi schools except Rweibare have a few pupils from group 6 or further, the largest 'tail' being for Nombe. P.1 schools are further spaced in Rubindi than in Kyeizooba and so average home/school distance is greater, but in Bubaare, where schools are most widely spaced, there are no pupils from further than group 5. The unexpectedly long 'tail' in Rubindi may be attributed to the fact that more P.1 pupils attend schools other than the nearest. This also accounts for the large number attending Kantojo in Kyeizooba in group 4. The reasons for this are discussed more fully below in the explanation of patterns of P.6 enrolments.

The important conclusion to be derived from this analysis is that the effective range of a P.1 class in Ankole is 5 km. Very few pupils travel more than 5 km to school and those who do travel long distances do not necessarily attend the school nearest their home. They are willing to travel the extra distance because, for one reason or another, this school is more attractive than the nearest school. No parts of Kyeizooba or Rubindi and only a very small uninhabited area of Bubaare are further than 5 km from a P.1 school. Inequality of initial access to first-level school is *not* apparently a function of population density, for, even in the very sparsely populated Bubaare, there is a P.1 class within walking distance of virtually every home. The incidence of P.1 attendance in these three *gombororas* is therefore more likely to be related to factors other than home/school distance. It has been seen, however (Map 6), that there are large sparsely-populated areas in Nyabushozi, Isingiro, Rwampara and Bunyaruguru which are more than 5 km from a government school.

The shapes of the P.6 histograms indicate a higher proportion of pupils coming from further away from the school than for P.1 in Bubaare and Rubindi, but, in Kyeizooba, three of the four schools have all pupils in groups 1–4 and Mwengura has only one pupil in group 5. No part of Kyeizooba *gombororo* is further than 5 km from a P.6 class and longer distances are therefore not necessary. This is certainly not the case in the other *gombororas*. Some pupils must walk further than 5 km to attend even their nearest school. Pupils in P.6 are older than those in P.1 and may be thought more able to walk longer distances. However, these older children are also of greater value than younger children as workers on the family land and the different opportunity/cost ratios of schooling, as against staying at home to work, may operate against older children walking longer distances.

Distance from the nearest school is not the only factor affecting the distance of movement to school. Maps 11 and 12 show patterns of movement from home to P.6 schools in Kyeizooba and Rubindi (there is no map for Bubaare

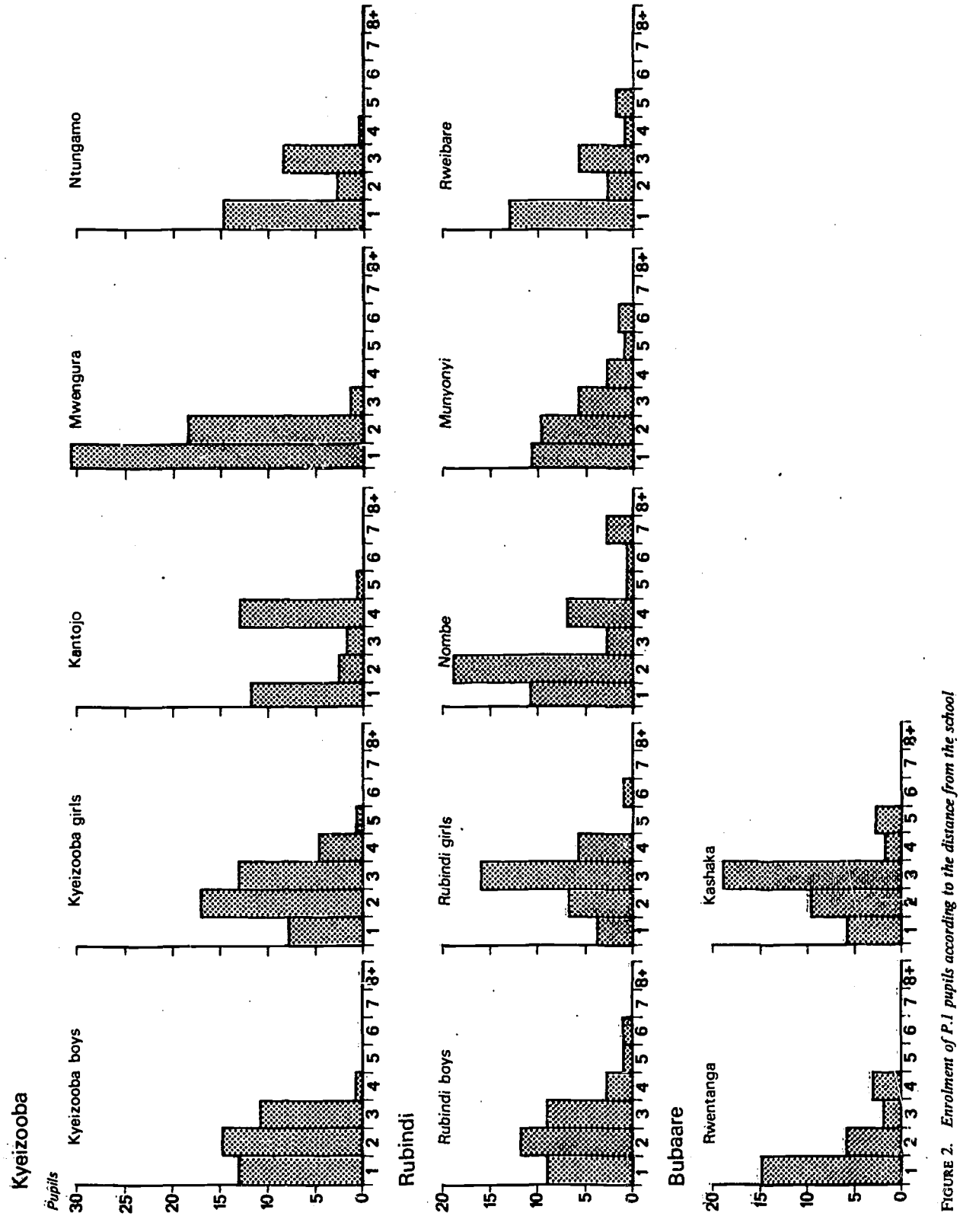


FIGURE 2. *Enrolment of P.1 pupils according to the distance from the school*

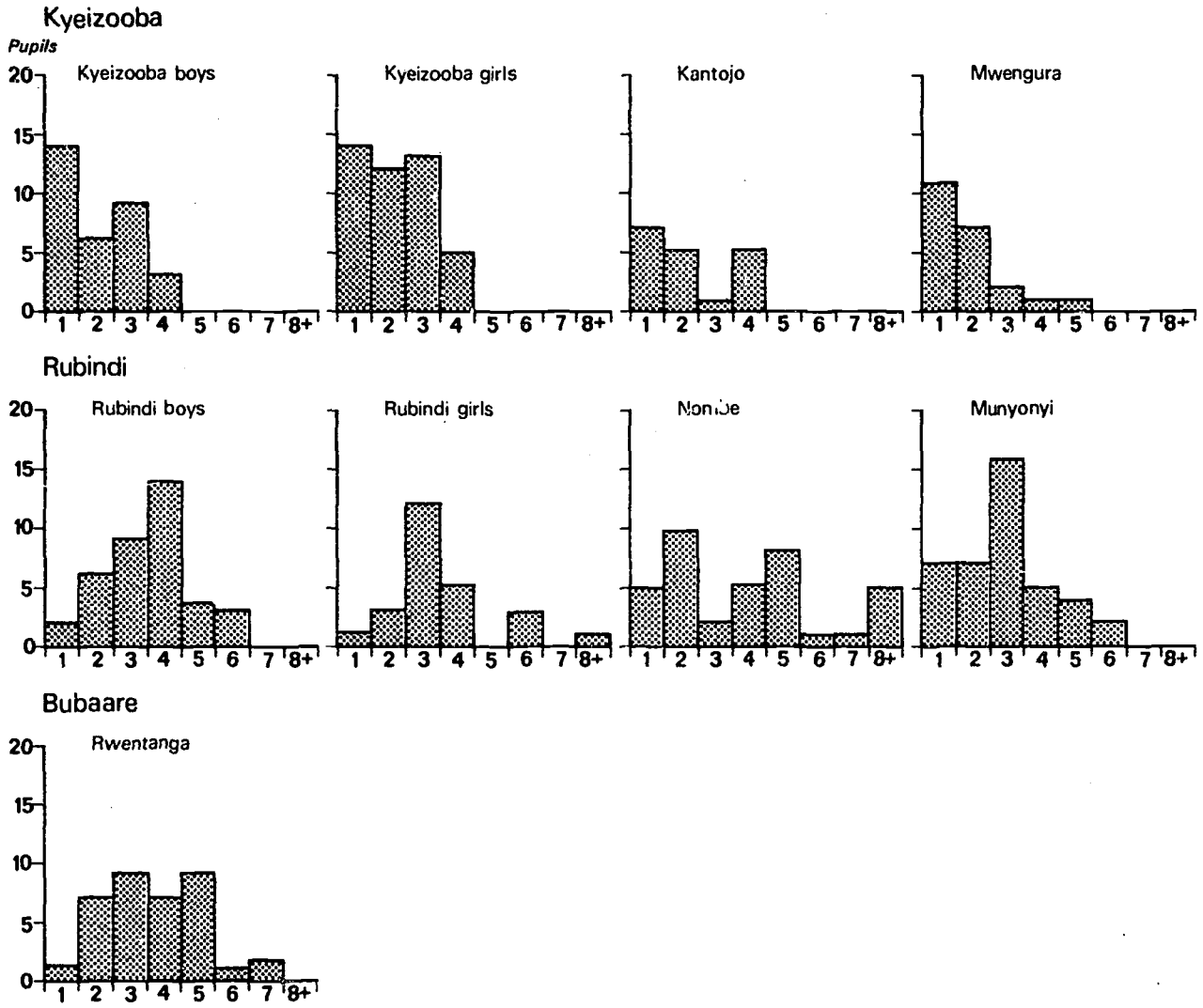


FIGURE 3. *Enrolment of P.6 pupils according to the distance from the school*

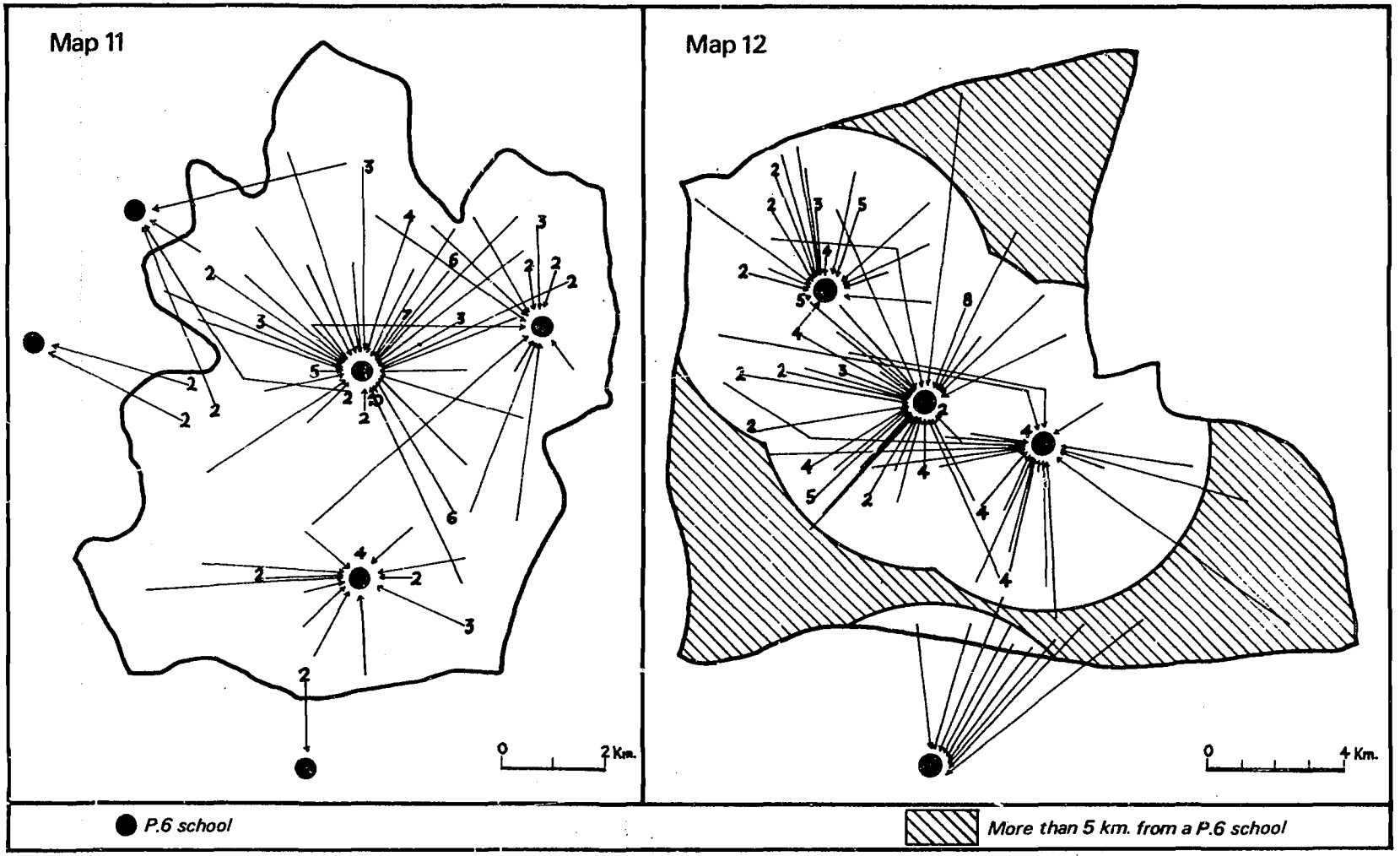
since there is only one P.6 school). Each arrow represents the flow from a grid square to a particular school, with Kyeizooba Boys' and Girls' schools and Rubindi Boys' and Girls' schools being counted as one school in each case, for their catchment areas are roughly the same. The number in the circle at the source indicates the numbers involved in that particular flow. Where no number is shown only one pupil is involved. Daily movements of pupils from the *gomborora* to certain schools in neighbouring *gombororas* have also been noted—from Kyeizooba to Bweranyange and Ruyonza in Kitsibo to the west and to Bugongi in Shuku, Shema County to the south (there is also said to be movement from Kyeizooba to certain schools in Bushenyi itself); and from Rubindi to Rutoma in Rwanyahemba *gomborora*.

The patterns described in the maps confirm that P.6 catchment areas overlap and that pupils do not necessarily attend the school nearest their home. There is an *interaction* rather than an *optimizing* pattern of movement. Many of the long-distance moves would be eliminated if there were optimizing spatial behaviour, i.e. if pupils were to attend their nearest school, and the 'tails' of the P.6 histograms would then be reduced.

The factors responsible for distorting the role of distance to promote this interacting pattern relate to the perceived quality of individual schools in two respects: religious foundation; and the quality of teaching.

v. Religion and P.6 enrolments

Although all nine schools offering P.6 in the three *gombororas* are government schools, they all began as private schools and remain associated with the denomination of their foundation. This may be seen from the stated religious adherence of the pupils interviewed in the survey (Table 7). Almost all school pupils in Uganda will give a



MAPS 11 AND 12. *Catchment areas for P.6 pupils in Kyeizooba and Rubindi gombororas*

TABLE 7. Enrolments in P.1 and P.6 by religious adherence

	P.1							P.6						
	C.O.U.		R.C.		Others			C.O.U.		R.C.		Others		
School	B	G	B	G	B	G	Total	B	G	B	G	B	G	Total
Kyeizooba														
C.O.U.														
Kyeizooba (B)	21	14	2	3	—	1	41	25	8	1	1	—	—	35
Kyeizooba (G)	27	15	—	1	1	—	44	19	19	1	1	2	3	45
Mwengura	31	19	2	—	—	—	52	19	4	—	—	—	—	23
R.C.														
Kantojo	7	1	13	10	—	—	31	8	4	3	1	1	1	18
Ntungamo	1	2	12	13	—	—	28							
TOTAL	87	51	29	27	1	1	196	71	35	5	3	3	4	121
Rubindi														
C.O.U.														
Nombe	22	12	1	5	2	3	45	19	12	3	1	1	2	38
Rweibare	11	8	3	3	—	—	25							
R.C.														
Rubindi (B)	5	2	20	6	2	—	35	1	1	30	6	—	—	38
Rubindi (G)	—	1	16	12	2	3	34	1	—	19	4	1	—	25
Munyonyi	7	1	15	9	—	—	32	11	—	27	3	—	—	41
TOTAL	45	24	55	35	6	6	171	32	13	79	14	2	2	142
Bubaare														
C.O.U.														
Rwentanga	12	10	—	3	—	1	26	19	12	4	1	—	—	36
Kashaka	13	14	—	2	1	—	30							
TOTAL	25	24	—	5	1	1	56	19	12	4	1	—	—	36

SOURCE IIEP survey

stated religious preference of Protestant, Catholic or Moslem when asked, although whether or not this indicates a genuine adherence to Christianity or Islam is another matter. In this survey only three of the 722 pupils interviewed indicated no adherence and these have been included in the table with Muslims as 'others'.

It is immediately apparent from Table 7 that there is relatively little denominational mixing between Catholic and Protestant pupils, except in Kantojo. All other schools reveal their foundation body in the stated adherence of their present pupils. This is the result not so much of a deliberately discriminatory admissions policy of schools and their headmasters, but rather of parental choice and the fact that in Kyeizooba and Bubaare there are relatively few Catholics in any case. The greatest overlap between catchment areas is in Rubindi where there are large Catholic and Church of Uganda groups with most Catholics to the west and most Protestants to the east of the main road. The general pattern of catchments for the Rubindi schools and Nombe indicates this spatial separation, but there is more overlap in their catchment areas than for any other neighbouring schools. Of the fourteen Nombe P.6 pupils in group 5 and above, ten live to the west of the main road in predominantly Catholic areas and the two Rubindi schools are nearer their homes than Nombe is. All of these pupils are Protestants and clearly exercise a preference to walk the additional four kms past Rubindi to attend a Church of Uganda school. The longest distances are over ten kms from the west of the *gomborora*. Of the eight pupils at the two Rubindi schools in group 5 and above, only one comes from the strongly Protestant area to the east and he is a Catholic. The evidence of the survey would seem to indicate that there is a greater denominational mix of the population in the western parishes and this is consistent with the view that the considerable in-migration into Rubindi of a presumably mixed population of cultivators from Igara, Shema and Buhweju counties has been attracted more to the wetter west than the drier east of the *gomborora*.

Kantojo presents an interesting situation as it is the only Catholic P.6 school in predominantly-Protestant Kyeizooba. It has a predictably Catholic enrolment in P.1, but of the eighteen P.6 pupils from this *gomborora* (there are others whose homes are in predominantly-Catholic Shema County) twelve are Protestants. There are five pupils in distance-group 5 and three of those are Catholics, with one Muslim and one Protestant for whom Kyeizooba Boys' and Girls' schools are nearest. For ten of the twelve Protestants, Kantojo is the nearest school, thus the catchment area is wider for Catholics than for Protestants at this Catholic school. However, nine pupils, all Protestants, who attended the Kyeizooba schools, lived nearer to Kantojo.

vi. Quality of teaching

There are very considerable differences in the real quality of the education provided in the first-level schools in the three *gombororas*, and equally large or even larger differences in its perceived quality. Quality is measured by

people, in general, by success in the first-level leaving examination and, since this implies a historical perspective, new schools will be less attractive than well-established schools with a history of successful passes. A school's prestige will affect its attractiveness and, all other things being equal, pupils will be prepared to walk further to 'better' schools than to less good schools. This may account for overlaps between the catchment areas of the Rubindi schools and Munyonyi. All are Catholic schools but nine P.6 pupils travel to Rubindi, although Munyonyi is nearer. Both Rubindi schools have been established for some years and Munyonyi is a new school. Perceived differences in quality may also account for the overlap of catchment areas of Ruyonza, a Church of Uganda school just outside Kyeizooba *gomborora*, and Kyeizooba Boys' and Girls' schools.

There are, therefore, distortions complicating the role of distance in movement to first-level school. The shape of the distance histogram is affected in that, for schools attracting a broad religious group or for high-prestige schools, there are more pupils from longer distances than might be expected. The effective range of the school is thus lengthened. Nevertheless, most pupils in the three *gombororas* do attend the school nearest their home. Although the maximum range of a P.6 class would appear to be greater than 5 km, longer journeys are usually due to the particular circumstances of the school and to the individual pupil. A Protestant whose home is nearest a Catholic school, or any pupil whose nearest school is not well thought of, will not be prepared to travel more than 5 km to that school. The effective range of a P.6 school for the general mass of the population can be reasonably set at 5 km. All parts of Kyeizooba are within 5 km of a P.6 school and Map 12 indicates those areas of Rubindi outside this range. Only areas within 5 km of Rwentanga can be assumed to be within range in Bubaare, but several pupils, all Protestant, in fact walk further to attend this very highly-thought-of Church of Uganda school. Several pupils from the north-east of the *gomborora* are within range of Katebe school in Kakika *gomborora*.

4. Conclusion

The above analysis has indentified the principal features of the first-level school map in Ankole by considering inequalities and inefficiencies in educational opportunity and enrolment patterns for the district as a whole and at the local level in three small areas. The identification of some of the general factors at work to create and maintain these inequalities and inefficiencies will enable the planning of a more rational school map for the future.

IV. Population change and enrolment targets

It is a self-evident principle that the size and form of any educational system should be related to the demographic condition of the area it serves. It must take into account the distribution of population as well as its aggregate size. Any exercise in educational planning must therefore consider the present and future population distribution and structures as a basis for assessing the extent and distribution of demand for schooling and suggesting measures to eliminte or minimize existing and projected deficiencies in the supply of schools.

The chief sources of data on the population of Ankole are the Uganda population censuses of 1948, 1959 and 1969. This discussion relies heavily on tabulations by sex and 5-year age-groups for each administrative division of the country in the first published volume of the 1969 census.[1] Due to boundary changes within Ankole at the *gomborora* and parish levels, comparison with 1959 data is only possible for the district at a whole and for the ten counties.[2]

1. Population growth

The population of Ankole rose from an estimated 537,339 in 1959 to 861,145 in 1969, giving an average annual growth rate of 4.9 per cent. In the light of data gathered in the 1969 census on fertility and mortality and other information on the extent of in-migration into the district, the Statistics Division have been able to suggest that the 1959 census estimate involved an under-count of some 20,000 and that the more likely inter-censal growth rate was 4.8 per cent per annum, with a natural increase component of 3.6 per cent, and a net migration component of 1.2 per cent.

The very high rate of natural increase, due particularly to a birth-rate that is very high even by the standards of most developing countries, is the most important feature of the demographic condition of Ankole. It had the highest birth-rate of all the districts of Uganda in 1959 and 1969 and this seems to be rising and the mortality-rate falling (Table 8).

1. See Republic of Uganda, *Report on the 1969 population census*, Entebbe, Statistics Division, Ministry of Planning and Economic Development, 1971 (Vol. 1, The population of administrative areas)
2. There was one minor boundary change involving the transfer of a very sparsely-populated area from Buhweju to Bunyaruguru.

TABLE 8. Birth and death rates for Ankole and Uganda, 1950 and 1969

	1959		1969	
	Ankole	Uganda	Ankole	Uganda
Crude birth-rate/1000	53	42	55	48
Crude death-rate/1000	24	20	19	19
Natural increase/1000	29	22	36	29

The result is that the age structure is heavily weighted in the lower age groups (Table 9) with 51.8 per cent of the population aged 0–14 compared with the national figure of 46.1 per cent and the 1959 Ankole figure of 49.1 per cent (Table 10). As the population structure becomes younger the possibility of a rapid decline in the crude birth-rate becomes increasingly remote and the natural component of growth is likely to remain high in the next decade.

The net migration component is the result of the difference between migration into and out of the district.

TABLE 9. Ankole: Age and sex structure, 1969

Age	Males	Females	Total	Sex ratio
0–4	94 167	96 940	191 107	97.2
5–9	72 257	71 809	144 066	100.6
10–14	57 496	53 382	110 878	107.7
15–19	33 703	39 054	72 757	86.3
20–34	72 506	92 853	165 359	78.1
35–49	42 481	46 344	88 825	91.7
50–64	24 430	27 525	51 955	88.8
65+	17 537	17 750	35 287	98.8
Not stated	414	497	911	
TOTAL	414 991	446 154	861 145	93.0

TABLE 10. Age structure: Ankole and Uganda

	Ankole 1959	Ankole 1969	Uganda 1969
% aged 0–4	21.1	22.2	19.2
% aged 5–9	16.0	16.7	15.4
% aged 10–14	12.0	12.9	11.5
% aged 0–14	49.1	51.8	46.1

SOURCE Tables 8, 9 and 10 based on *Report on the 1969 population census*, op. cit.

A. IN-MIGRATION

The 1959–69 inter-censal period was particularly unrepresentative of in-migration into Uganda because, in this period of considerable political change in neighbouring countries, many refugees came into Uganda from Rwanda, Zaire, the Sudan and Burundi. There are two major settlements for Rwandan refugees in Ankole and over 34,000 residents of the district in 1969 were stated to have been born in Rwanda. Since repatriation from these settlements is not likely they must be considered as being permanently settled in Uganda. Further influxes of refugees cannot be foreseen. Another in-flow of about 3,000 people derived from the establishment of an army barracks at Mbarara. This too, is a feature of the inter-censal period and will not be repeated.

The most important form of in-migration is likely to continue. This involves in-flows from neighbouring Kigezi, a district with severe problems of land shortage and population pressure for which the most obvious outlet is, and has been for several decades, movement into the relatively under-populated Ankole. Over 75,000 people in Ankole in 1969—about 9 per cent of the total population—were born in Kigezi. This spontaneous inter-district movement is likely to continue into the 1970s and may assume even greater proportions.

Since no major developments are planned in Ankole during the next decade it is difficult to predict new in-migrations into the district. Any development of wage labour can be satisfied easily by local labour.

B. OUT-MIGRATION

The main movement out of Ankole is of wage labourers. Ankole is a poor district and cash-earning opportunities are available elsewhere. It has been a large source of labour for the relatively well-developed areas of Uganda near the shores of Lake Victoria, including the main urban centres of Kampala and Jinja.[1] An important feature of the movement of labour however is its circulatory nature. Very often it is only the men who leave the district and this is reflected in the sex imbalance, especially in the economically-active age-groups (Table 9). The men return to Ankole after a period of work and, even if their families go away to their place of employment with them, they retain the right to land, which is left in the care of a relative or neighbour. There is a very slow drift from Ankole to take up permanent residence elsewhere, but there is no evidence to suggest that the rate of drift is increasing or likely to involve large numbers of people in the forseeable future.

The net migration component of growth can be expected to remain an in-flow until 1979. The extent of population increase through in-migration may decline from the estimated 1959–69 rate of 1.2 per cent per annum, but will remain an important element in the demography of the district.

2. Population re-distribution

While the aggregate population of Ankole is likely to continue to grow at much the same rate, there is likely to be considerable internal re-distribution. There were widely differing annual growth rates for the ten counties from 1959 to 1969, ranging from 1.7 per cent for Kajara to 11.4 per cent for Nyabushosi (Table 11). Nyabushosi's population increased three-fold and it had the highest inter-censal growth rate of any county in Uganda.[2] Four counties—Nyabushosi, Isingiro, Mitoma and Kashari—had increases of over 7 per cent per annum and five—Shema, Igara, Rwampara, Buhweju and Kajara—had increases of less than 4 per cent per annum. The tenth county, Bunyaruguru (6.5 per cent) benefited from a slight boundary change which took in some population from Buhweju. There are, therefore, two main contrasting groups of counties—those to the east with very high rates of growth, and those to the west with medium to low rates of growth.

From this and other available evidence, four major elements in the internal re-distribution of population may be identified.

TABLE 11. Ankole: population growth by county, 1959–69

	1959 population	1969 population	Increase	Annual growth rate (percentage)
Shema	79 710	115 301	35 582	3.8
Rwampara	107 954	147 826	39 872	3.1
Mitoma	39 010	80 769	41 759	7.5
Nyabushosi	12 609	37 224	24 615	11.4
Igara	98 241	139 924	41 683	3.6
Buhweju	20 137	25 401	5 264	2.4
Bunyaruguru	14 330	26 946	12 616	6.5
Kashari	42 862	85 869	43 007	7.2
Kajara	87 414	103 111	15 697	1.7
Isingiro	35 072	98 774	63 702	10.9
ANKOLE	537 339	861 145	323 797	4.9

A. MOVEMENT FROM HIGH TO LOW DENSITY AREAS

This manifests itself as a drift from west to east. Rates of natural increase, as measured by the number of children aged less than 5 as a percentage of the total females in each *gomborora*,[3] are generally highest in areas with the lowest total growth (Table 12). Six of the ten highest percentages are in Shema or Igara and five of the lowest ten are in Nyabushosi or Isingiro.

A comparison of the sex ratio of the economically-active age-group (20–35) is the most direct measure of variations in the rate of labour circulation (but not of permanent out-migration) and is useful as a proxy measure for population pressure, for the rate of labour migration can be expected to be greatest where population pressure is most severe. Those *gombororas* with high rates of natural increase tend to be areas of low sex ratios, hence greatest population pressure.

The correlations between natural growth, labour circulation and population density are not exact (Table 12),

1. See D. J. Stenning, *Coral tree hill* (Paper read at the Conference of East African Institutes of Social Research, Kampala, 1958) and *Annual enumeration of employees*, op. cit.
2. See B. W. Langlands, 'Population distribution in Uganda, 1959–69', in *East African geographical review*, Kampala, 1971 (No. 9, pp. 59–68).
3. To have used percentage of total population would have introduced variations caused by differing rates of labour migration.

TABLE 12. *Gomborora* rankings, 1969

County	*Gomborora*	Rankings A	B	C
Shema	Kabira	9	51	15
	Kagango	5	46	8
	Shuku	13	43	11
	Kigarama	9	41	5
	Kitagata	12	39	10
Rwampara	Ndeiza	18	28	25
	Rugando	15	32	30
	Ntungamo	17	26	34
	Bugamba	24	27	18
	Ruhama	16	30	32
	Rukoni	31	44	13
Mitoma	Bisheshe	30	4	1
	Kanoni	36	40	28
	Buremba	49	9	38
	Nyabuhikye	13	10	36
	Rukiri	29	11	33
Nyabushosi	Nyakasharara	51	1	49
	Kenshunga	48	8	46
	Kazo	45	21	31
	Kinoni	50	17	45
	Kashongi	43	31	29
	Burunga	47	5	51
Igara	Kitsibo	4	24	19
	Kyabugimbi	21	29	4
	Nyabubaare	1	42	16
	Mitooma	7	50	21
	Kyeizooba	2	23	17
	Kyamahunga	33	6	2
	Bitereko	19	45	7
Buhweju	Karunga	25	20	43
	Bihanga	42	15	12
	Rwengwe	33	33	47
	Burere	41	7	14
Bunyaruguru	Ryeru	28	19	6
	Kichwamba	45	3	39
Kashari	Rubindi	20	38	23
	Rubaya	35	16	26
	Kakika	3	2	50
	Bubaare	37	22	37
	Rwanyahemba	21	49	35
Kajara	Ihunga	6	48	24
	Ngoma	26	34	41
	Bwongera	8	47	27
	Kayonza	11	36	44
	Rubaare	26	37	48
Isingiro	Burere	38	13	20
	Kabingo	38	18	9
	Kikagate	23	35	3
	Ngarama	32	12	42
	Rugaga	43	25	21
	Kashumba	40	14	40

A = Population density.
B = Number of males per 100 females in 20–35 age-group.
C = Number aged 0–4 per total females.
SOURCE *Report on the 1969 population census*, op. cit.

but it is clear that there is considerable inter-relation between them, that the areas of highest natural growth have the lowest inter-censal population increases, and areas of low natural growth have the highest inter-censal increases. The only possible explanation is that people are moving from high to low density areas. This has involved movements of cultivators to colonize new land, particularly in the wetter areas of the eastern counties such as Rubindi *gomborora* of Kashari. Although Kashari has the lowest percentage increase of the four eastern counties, it has the highest absolute internal increase, since much of the increase for Isingiro is caused by the refugee settlements of the Orichanga valley and Nyakivale.[1]

B. MOVEMENT OF PASTORALISTS

Movement of pastoralists has taken place from Kajara and Rwampara into Nyabushosi. During the 1960s large areas of Nyabushosi were cleared of the tsetse fly, enabling a greater number of cattle to be kept in this excellent grazing area. Most cattle and their herdsmen owners and families came from the over-stocked counties of Kajara and Rwampara in which there was also pressure on land for cultivation. In addition to the movement of family groups there has been an influx of wage-earners into ranching areas of Nyabushosi. This is indicated by the very high sex ratio for Nyakasharara *gomborora*, the area of the Ankole Ranching Scheme.[2]

One important effect of the increase in cattle and population densities in Nyabushosi and increasing competition for grazing land has been the fencing of holdings and a decline in the amount of common grazing available. These have resulted in changes in the seasonal and daily mobility patterns of pastoralists. The traditional pattern of movement is from a central kraal and:

> 'to this centre the cattle return each night and here the herdsmen remain until the pasturage for several miles around was exhausted. A new centre was then chosen and the men build their fence and shelters anew. In the dry season they would remain only a few weeks in one place but during the rains when the grass was more abundant they built better huts and remained in one place somewhat longer.'[3]

This movement is very largely a thing of the past. The pastoralists now have permanent homesteads and this change has important implications for the expansion of social provision in their areas.

C. DOWNHILL MOVEMENT FROM BUHWEJU

Buhweju is very isolated[4] and, apart from an apparently successful settlement scheme based on tea production at Nyakashaka organized by the Church of Uganda,[5] there has been relatively little agricultural change in this county. This upland mass is too high for successful coffee growing and, in order to enter the rural cash economy, it has been necessary for farmers to seek land at a lower altitude. Many incomers into Kashari and Mitoma are from Buhweju.

1. D. R. G. Belshaw, 'Resettlement schemes for Rwandan refugees in Uganda' in *East African geographical review*, Kampala, 1963 (No. 1, pp. 46–48).
2. See K. Peace, op. cit.
3. See J. Roscoe, *The banyankole*, London, C.U.P., 1923.
4. See J. C. Doornkamp, 'The isolation of Buhweju county, Ankole' in *East African geographical review*, Kampala, 1964 (No. 2, pp. 23–29).
5. See C. R. Hutton, 'Nyakashaka, Uganda' in *African affairs*, London, O.U.P., 1968 (No. 267, pp. 118–23)

D. MOVEMENT TO EMPLOYMENT CENTRES

There is some movement to specific centres of attraction and to focuses of employment in particular. Mbarara town, the only major urban area in Ankole, might be thought to be the chief of these, yet the total population of 16,078 is not very large (it cannot be compared directly with any 1959 figure due to boundary changes), and over 3,000 of these live in or are supported by the army camp.

The *gombororas* with high sex ratios in the 20–35 age group may be identified as centres of attraction, but within each of these *gombororas* usually one parish contains the surplus male population. Thus in Kakika *gombororo*, Mbarara town, Ruharo, Kamakuzi (both on the outskirts of Mbarara) and Kakika parish (in which there is a prison) have a surplus of males over females and the other two parishes have sex ratios below 80; Bisheshe in Mitoma has a surplus of males in only two of the six parishes, with a large prison farm in one of these; Kyamahunga in Igara has a surplus of males in two of the six parishes with tea estates employing male wage-labourers in each of these two; Kichwamba *gombororo* in Bunyaruguru contains the employment centres connected with the Queen Elizabeth Game Park and the fish factories of Kishenyi on the boundary with Toro district.

These focuses are all small and do not constitute major poles of attraction. Urbanization shows no signs of increasing beyond the present 2.9 per cent of the population living in centres of over 250 people and prospects of large-scale movements to towns and employment are remote.

3. Population distribution and structure in 1979

Accurate population projections are notoriously difficult, especially where aggregate growth rates are high and considerable re-distribution of population is likely to occur during the projection period. It is, however, essential to make projections of the distribution and structure of the population if the education system is to bear some meaningful relationship to the population it is to serve. Estimates of projected changes in the distribution of population are of vital importance for the School Map Project in order to identify areas of under-capacity and assess where new schools are needed.

The projections discussed below are for the fairly short-term target year of 1979 and are based on the experience of the inter-censal period 1959–69. In that period two groups of counties were identified by their rates of growth: firstly Shema, Rwampara, Igara, Buhweju, Bunyaruguru and Kajara with relatively low growth; and secondly Mitoma, Nyabushosi, Kashari and Isingiro with high rates of growth. It is likely that these groupings will continue to 1979. There will be a continuing drift from west to east, although rather fewer pastoralists from Kajara and Rwampara than during the 1959 period, but the *rate* of growth for the eastern counties will taper off slightly even though *absolute* growth may be the same. The high rates of growth for Nyabushosi and Isingiro in 1959–69 were partly due to the very low base level, but also to the special factors discussed above, namely tsetse fly clearance and a refugee influx. Table 13 estimates the population growth by county to 1979, under two sets of projections. The lower projection assumes a growth rate of 3 per cent per annum for the low-growth counties and 5 per cent per annum for the high-growth counties; the higher projection assumes 4 and 6 per cent respectively. On the lower projection, the population of the district as a whole will increase by 45 per cent or at 3.7 per cent per annum to 1979 and, at the higher rate, almost 60 per cent or 4.7 per cent. The changes in the distribution are summarized in the percentage of the district population resident in each county in 1969 and 1979 (Table 14).

TABLE 13. 1979 population projections by county

	1969 population	1979 projection	
		Low rate	High rate
Low growth		3%	4%
Shema	115 301	154 849	170 530
Rwampara	147 826	198 530	218 635
Buhweju	25 401	34 114	37 568
Igara	139 924	187 918	206 948
Bunyaruguru	26 946	36 189	39 853
Kajara	103 111	138 478	152 501
High growth		5%	6%
Isingiro	98 774	160 903	176 904
Nyabushosi	37 224	60 638	66 668
Kashari	85 869	139 881	153 792
Mitoma	80 769	131 573	144 657
ANKOLE	861 145	1 243 073	1 368 056
Growth rate % p.a.		3.7	4.7

SOURCE IIEP projections

TABLE 14. Percentage of the population by county, 1969 and 1979.

County	1969	1979
Shema	13.39	12.46
Rwampara	17.16	15.98
Mitoma	9.38	10.59
Nyabushosi	4.32	4.88
Igara	16.25	15.12
Buhweju	2.95	2.74
Bunyaruguru	3.13	2.91
Kashari	9.97	11.26
Kajara	11.97	11.14
Isingiro	11.47	12.95
ANKOLE	100.00[1]	100.00

1. Totals differ due to rounding.
SOURCE IIEP projections

It is likely that these changes will be accompanied by changes in the age structure of the population. During the 1959–69 period the population in younger age groups grew at a rate that was slightly higher than the rate of growth of the population as a whole (Table 15). Whether or not this will continue will depend on the behaviour of the birth-rate. If the birth-rate were to remain constant at fifty-five per

TABLE 15. Age specific growth rates, 1959–69

Age group	1959	1969	Annual growth rate (%)
0–4	112 000	191 107	5.4
5–9	85 000	144 066	5.4
10–14	63 000	110 878	5.8
0–14	260 000	446 051	5.5
ANKOLE TOTAL	529 712	861 145	5.2
% aged 0–14	49.1	51.8	

1,000 and the mortality-rate were to continue to decline for all age groups, the percentage in the lower ages will decline. However, since there was a very high birth-rate in the 1959–69 period, there will be a larger number of women of child-bearing age in the 1969–79 period and the crude birth-rate may rise, even if the general fertility rate is constant. This is the more likely of the two possibilities and it means that the age structure will continue to show an increasing percentage of the population in the younger groups. The rate of growth of the school-age population will continue to be greater than the rate of growth of the population in general.

4. Implications for the educational system

A considerable volume of literature is now available to focus attention on the widespread problem of maintaining educational expansion in the face of rapid population growth.[1] The 1961 Conference of African States on the development of education in the continent resolved that first-level education should be universal, compulsory and free by 1980. If there were universal first-level education in Ankole in 1969, the population projections indicate that an expansion of at least 50 per cent would be needed by 1980 to maintain this position. However, the participation rate in Ankole was probably less than 30 per cent in 1969 and to have universal first-level education in the district by 1980 would require a five-fold expansion. This is clearly impracticable in a poor country where already a very high proportion of government expenditure goes on education. The possibility of achieving universal first-level education cannot be entertained in the short term.[2]

With a rapid population increase Ankole must run very fast just to stand still. An acceptable planning target is to maintain present participation rates, i.e. keep expansion abreast of population increase. This target is illustrated and considered for Uganda as a whole by Philip Coombs:

> 'Uganda, and many other countries similarly situated, will have to expand their primary school enrolments very considerably in the next fifteen years just to keep their participation rates from falling. That is, they will have to expand even faster in order to prevent a rise in the absolute number of youngsters who are not getting any primary schooling at all and are thus condemned to permanent illiteracy.'[3]

The financial implications of the necessary expansion are also taken into account and it is shown, with the rate of population growth forecast in 1966 (a rate that is in fact lower than the present estimates) and at costs prevailing in 1966, the cost of maintaining participation rates will increase from £4.9 million in 1966 to £14.19 million by 1981.[4]

Measurement of the demand for education can be approached from two different and often opposing points of view. The *economic demand* approach is to measure the need for skilled manpower and to gear the educational system to produce a supply of people suitably qualified to satisfy it. The alternative is to consider the *social demand*, the amount of education that the population wishes to have for its children, and to provide enough schools to supply as much education as is demanded. Educational expansion in Uganda has been dominated by the former approach in a series of manpower plans and the social demand for education has been given minor consideration; but social demand exists and has generated a very considerable private sector in educational provision which is completely outside government control. Enrolment in private schools has consistently been underestimated in manpower plans, and Uganda is now over-supplying the economic demand. This results in a school-leaver problem and unemployment of an educated group that cannot be absorbed by the economy.

Since social demand cannot be ignored, the government ought to attempt to move from a manpower approach to a demographic approach in meeting the need for educational expansion. The social demand may rise even if there is no population increase, for there are more and more parents who themselves have been educated and there is a higher level of aspirations. However, where there is population growth, greater demand and rising aspirations all at the same time, the educational system can very easily go completely out of the government's control.

A social demand approach, which ensures that educational expansion is related directly to the rate and direction of population growth and that enrolment ratios do not fall, is implicit in the following discussion of the first-level school maps for Ankole. In the very large expansions that are obviously required there is considerable scope to take population re-distribution into account to reduce existing inequalities of opportunity within the district and within each county and *gomborora* by relating the school map for the target year to the projected population distribution.

1. See Unesco, *Educational implications of population trends in Africa*, Addis Ababa, Economic Commission for Africa, 1971 (Paper presented at the African Population Conference, Accra, 1971).
2. Admittedly, because of its obvious implications, an hypothesis of universal first-level education by 1980 is unrealistic as it implies a five-fold expansion. However, it would have been useful to examine the hypothesis of universal first-level education at a later date (for example, 1990 or 2000) and to frame the pattern in 1980 accordingly, i.e. to use an hypothesis of an 'ideal supply' as a framework. (IIEP)
3. See P. H. Coombs, *The world educational crisis*, New York, O.U.P., 1968.
4. Ibid, p. 56

TABLE 16. Enrolments in P.7, 1979

	Total 1979 population	Pop. aged 10–14	Enrolment ratio (1969 level)	1979 enrolment	Enrolment ratio (adjusted)	1979 enrolment
Low projection						
Shema	154 849	19 975	7.32	1 462	7.00	1 398
Rwampara	198 530	25 610	6.08	1 557	6.00	1 537
Mitoma	131 573	16 973	7.15	1 213	7.00	1 188
Nyabushosi	60 638	7 822	4.80	376	5.00	391
Igara	187 918	24 241	5.85	1 418	5.75	1 394
Buhweju	34 114	4 401	6.27	276	6.25	275
Bunyaruguru	36 189	4 668	3.45	161	5.00	233
Kashari	139 881	18 045	5.51	994	5.60	1 010
Kajara	138 478	17 902	4.55	815	5.25	940
Isingiro	160 903	20 757	6.61	1 372	6.50	1 349
ANKOLE	1 243 073	160 394	6.00	9 644	6.05	9 715
High projection						
Shema	170 530	21 998	7.32	1 610	7.00	1 540
Rwampara	218 635	28 204	6.08	1 714	6.00	1 692
Mitoma	144 657	18 661	7.15	1 334	7.00	1 306
Nyabushosi	66 668	8 600	4.80	413	5.00	430
Igara	206 948	26 696	5.85	1 562	5.75	1 535
Buhweju	37 568	4 846	6.27	304	6.25	302
Bunyaruguru	39 853	5 141	3.45	177	5.00	257
Kashari	153 792	19 839	5.51	1 093	5.60	1 111
Kajara	152 501	19 673	4.55	895	5.25	1 032
Isingiro	176 904	22 821	6.61	1 509	6.50	1 483
ANKOLE	1 368 056	176 479	6.00	10 611	6.05	10 688

SOURCE IIEP projections

5. The demand for first-level education in 1979

The projections of the population of Ankole by county at the lower annual growth rate of 3.7 per cent and the higher rate of 4.7 per cent may be used to estimate the pattern of demand for first-level education that will be necessary by 1979. It is assumed that participation rates for the district as a whole remain unchanged, i.e. below the national average. Expansion will be just sufficient to keep abreast of the population growth. While this is less than achieving universal education or even improving provision in Ankole relative to the rest of the country, it represents a realistic target as an absolute minimum requirement.[1]

In Table 16, P.7 enrolments for 1979 are estimated under various conditions. The low and high total projections are converted to the numbers aged 10–14, assuming that the proportion of the population in this age group in 1979 is the same as in 1969 (12.9 per cent). Using the enrolment ratios calculated in Table 4 (page 28), 1979 enrolments are given. However, these enrolment ratios vary from 3.45 for Bunyaruguru to 7.32 in Shema, yet the school map for 1979 must begin to reduce existing inter-county inequalities. The enrolment ratios used in estimating demand have been adjusted to do this, but the overall district figure remains much the same. The index is adjusted upwards for Bunyaruguru, Kajara, Kashari and Nyabushosi and reduced for Shema, Igara and Isingiro.[2] Although inequalities remain, with enrolment ratios from 5.0 to 7.0, disparities between enrolment and population within each county are smaller for 1979 than for 1969 (Table 17, overleaf).

Table 18 summarizes the required increases in P.7 enrolments between 1971 and 1979. The two right-hand columns of this table are the more desirable of the two sets of increases, for, if these are achieved, not only will expansion have kept abreast of population increase, but existing inequalities within Ankole will have been reduced. The greatest absolute increases are required in Isingiro, Mitoma and Igara, and the greatest relative increases in Bunyaruguru, where enrolment ought to be more than doubled.

1. It would have been most interesting to make another hypothesis and to compare the low 'absolute minimum requirement' hypothesis with a high hypothesis (for example, 35 or 40 per cent enrolment ratio). (IIEP)
2. It seems neither realistic nor desirable to reduce the index for Shema, Igara and Isingiro. A more appropriate suggestion would have been to leave the index constant for these counties and to increase it for the others, thereby reducing the range of enrolment ratios. (IIEP)

TABLE 17. Population and P.7 enrolment by county, 1969 and 1979.

	1969		1979	
	% population	% P.7 enrolment	% population	% P.7 enrolment
Shema	13.39	16.15	12.46	14.41
Rwampara	17.16	17.68	13.98	15.83
Mitoma	9.38	11.10	10.58	12.22
Nyabushosi	4.32	3.19	4.88	4.02
Igara	16.25	16.31	15.12	14.36
Buhweju	2.95	3.28	2.74	2.83
Bunyaruguru	3.13	1.56	2.91	2.41
Kashari	9.97	8.48	11.26	10.40
Kajara	11.97	9.80	11.14	9.66
Isingiro	11.47	12.45	12.95	13.88
ANKOLE	100.00[1]	100.00	100.00	100.00

1. Totals differ due to rounding.
SOURCE IIEP projections

TABLE 18. Increases in P.7 capacity by county, 1971–79

	1971 P.7 enrolment	Required additional capacity in P.7			
		At 1969 enrolment ratio		At adjusted enrolment ratio	
		Low projection	High projection	Low projection	High projection
Shema	1 074	388	536	324	466
Rwampara	1 176	381	538	361	516
Mitoma	738	475	596	450	568
Nyabushosi	212	164	201	179	218
Igara	1 085	333	477	309	450
Buhweju	218	58	86	57	84
Bunyaruguru	104	57	73	129	153
Kashari	564	430	529	446	547
Kajara	652	163	243	388	380
Isingiro	828	544	681	521	655
ANKOLE	6 651	2 993	3 960	3 164	4 037

SOURCE IIEP projections

V. Development of the first-level school network

The increased demand for first-level schooling, caused by the anticipated rapid population increase, must be matched by an expansion of enrolments in first-level schools which at least keeps pace with the growth of the school-age population and also ensures that participation rates do not fall. The necessary increase in enrolment provides an unrivalled opportunity to plan a school map that is more rational than the existing one, for it will make possible a reduction of existing inequalities in educational opportunity within the district and a reduction, or even perhaps elimination, of certain of the other inefficiencies in enrolment patterns that have been identified in the current situation. It is the purpose of this case study to plan a rational pattern of supply that will be sufficient to meet that demand.

The central concern for a more rational spatial pattern of supply, and not merely matching aggregate supply and aggregate demand in Ankole, must be stressed. In 1971 only 146 of the 252 government schools in the district offered the full range of classes from P.1 to P.7, but if all the government schools, together with the eight existing complete-cycle private schools, were to be up to P.7 by 1979, these 260 schools could accommodate 9,861 P.7 pupils, given the same average class size of 37.85 as in 1971. This would be sufficient to cover the enrolment necessary at the low-projection population growth rate for Ankole as a whole, but would not take the distributional aspects into account, i.e. aggregate demand would be met, but there would be no re-structuring to take account of inequalities in the existing pattern of supply and of population growth to 1979.

The two preceding chapters have considered the existing school map and the projected pattern of demand for 1979, and the rational pattern of supply. In effect, the first-level school map for 1979 will be formulated by assessing the extent to which the existing pattern of schools must be altered to achieve a system that is more closely related to the projected pattern of demand. Although the projections of demand may be subject to error, they do not seem to be as great a barrier to rational planning as the inadequacy of available information on the existing school map. It is not sufficient in a school-mapping exercise to assess what the pattern of demand will be; the case study must also assess how that demand can be met most efficiently from the base of the existing map.

The chief difficulty is the lack of knowledge about the distribution of enrolment in private schools. The survey reported in Table 3 (page 26) for 1969 did not give a breakdown of the enrolment by grade, so that one cannot deduce, even at the crudest level, the distribution of total enrolments in P.1. Enrolment in government schools only is not a reliable guide to the total enrolment. To achieve the county targets for P.7 given in Table 18, there must be a great increase in enrolments in P.1 by 1973, but since the distribution of existing enrolments is not known and certainly not within the government's control, the distribution of additional supply cannot be calculated. At the aggregate level, out of an estimated total enrolment of 84,000 in government and private schools in 1969, there were only 6,000 P.7 pupils, i.e. one-twelfth of the total enrolment was in P.7. If drop-out and repeater rates are to remain unchanged, a total enrolment of 120,000 would be required to support a P.7 enrolment of 10,000 in 1979. Most of the pupils in the unknown private sector are in P.1 and P.2 and, until more data on these are available, a P.1 school map cannot be discussed.[1]

1. Existing expansion procedure

Expansion of the government system has been traditionally achieved by extending financial aid, and hence control, to existing first-level schools. Only one first-level school in Ankole, Mbarara Town School, was established by direct government initiative. Expansion by taking over existing enrolment will be recorded in official statistics, but there might be no real increase in enrolment since the school may continue to have the same number of pupils before and after the take-over. The main improvement is likely to be in the quality of education provided, since a

1. Data on admission to P.1 and the flow through P.1, P.2 and P.3 is crucial for the analysis and development of the school system; lack of information on these aspects and on the private sector is a serious disadvantage. (IIEP)

qualified teacher will be employed. There will not necessarily be any adjustment to the first-level school map.

Any decisions on adjustments to the school map for government schools are made by the DEO. He decides which schools ought to expand their enrolments and to which schools government control ought to be extended. He does this in consultation with the church authorities and other pressure groups. The Church of Uganda and Catholic diocesan secretaries submit memoranda suggesting which of their schools they would recommend for support and he is continually in receipt of letters from parents and school authorities asking for government support for their particular school. One such example is from Nyamirima, one of the church schools in Kyeizooba (Appendix III). The case for selecting Nyamirima is not very strong, largely on account of its location, less than 4 km from the two Kyeizooba schools and Kantojo, but many other letters are in support of schools which lie outside the range of existing government schools. These are schools which very often have adequate enrolments and facilities. The DEO's choice is made on a fairly 'rule-of-thumb' *ad hoc* basis, but current policy aims to consolidate the existing government schools until they all offer the whole P.1–7 range, rather than taking over new schools. Some of the more general conditions discussed below will strengthen the systematic basis for practical decision-making. As examples of the workings of these guidelines in specific situations, proposals are made for priorities in the development of the school maps for the three *gombororas* selected for detailed survey.

2. Range and threshold of first-level schools

In the absence of the necessary specific information for planning the expansions, the approach of this report must be towards establishing general criteria to be taken into consideration. Expansion to 1979 can be achieved in two ways—by establishing new schools or by expanding existing ones. Both these methods can of course be pursued simultaneously, but some general guidelines can be set out to indicate preferences under different conditions.

It has been established that the acceptable range of a first-level school in Ankole is five km. It is true that the range of many schools has been shown to be greater than this, with some pupils living more than ten km from the school they attend, but such cases are a very small minority and are likely to occur only in special circumstances. In particular, the pupil may be expressing his or her parents' preferences by walking this long distance, while living within the range of another school. There has been no attempt to introduce school zoning, although the problem of spatial competition and excessive walking distance introduced by rival missions has been widely recognized in official circles.[1] This discussion assumes, therefore, that the effective range of a first-level school in Ankole is five km.

Map 6 (page 25) showed the areas within a five km range of government first-level schools and private first-level schools offering P.7 in 1971. If all the government schools were to be up-graded to P.7 by 1979 and the eight completely private schools were to continue to have P.7 classes, this map would indicate those areas within the range of a P.7 school in 1979. Most of the district is covered; the outstanding exceptions are the almost uninhabited Rift Valley area of Bunyaruguru and the low-density areas of Nyabushosi, Isingiro and Rwampara. Schools that do exist in these areas are islands of opportunity.

A reasonable policy for the formulation of the first-level school map would be to have schools located in such a way that all pupils live within the range, i.e. daily commuting distance, of a school. This would clearly necessitate establishing new schools in the presently unserved areas. These areas are very sparsely populated, however, and whether or not schools will be feasible will depend on the minimum acceptable enrolment or minimum threshold for individual schools.

Since there are no fixed guidelines on school size and since no detailed studies of minimum, optimum and maximum enrolment have been undertaken, actual enrolments in first-level schools in Ankole vary considerably. A few schools have less than 150 pupils in a seven-class school, an average of just over twenty per class, whereas others have over 350 in seven classes at an average of over fifty per class. The official class size is forty pupils, but this cannot be kept constant where there are high drop-out and repeater rates. A P.1 class of fifty may be reduced to thirty by the time it reaches P.7, even with the addition of some pupils from schools that have no upper classes.

Small classes are clearly inefficient since the largest item of cost in first-level school education is the cost of the teacher's salary. A low pupil/teacher ratio will be expensive per pupil-place. An important saving in first-level school costs, while expansion is in progress, is to increase class size, as well as school size, so that the average class is about forty. Bennett has recommended a P.1 class of forty-eight and an overall average of forty to forty-two;[2] the World Bank Report on the economic development of Uganda ten years ago recommended that every effort be made to push the average class size up to forty.[3] A seven-class school with an average of forty pupils per class will have an enrolment of nearly 300. This level is, in fact, reached in all four P.7 schools in Kyeizooba and in Rwentanga in Bubaare, but in Rubindi only one of the four schools had an enrolment of over 250. Of the five P.7 schools in Nyabushosi only one had an enrolment below 250 and two had over 300. A *minimum* acceptable enrolment can be given as 250 with a minimum enrolment of thirty pupils in P.7.

Schools also have a maximum threshold enrolment beyond which expansion is unacceptable. Class size can be greater than forty, but there is an upper limit set by the physical limits of accommodation in a classroom and the maximum number any teacher can be expected to deal with. There is an official maximum enrolment of forty per class, but this is not enforced, for if it were it would meet (and has met) massive local opposition. Maximum and

1. See S. J. Luyimbazi-Zake. 'Educational revolution in Uganda' in *The challenge of Uganda's second five-year plan*, Kampala, Milton Obote Foundation, 1967 (pp. 63–69)
2. See N. Bennett, 'Uganda: educational cost analysis', op. cit.
3. See International Bank for Reconstruction and Development, *The economic development of Uganda*. Baltimore, The Johns Hopkins Press, 1962 (p. 349).

minimum class thresholds do not differ greatly, unlike the maximum and minimum enrolments per school. At present the great majority of first-level schools have one stream with maximum enrolments of 300–350. In a double-stream school, however, total enrolment rises to 600–700 and in a three-stream school to 1,000. This is not an unreasonably large enrolment and many urban first-level schools, in fact, have higher enrolments. A two-stream or larger school would enable a saving in salary expenditure, for while the staff establishment of a single-stream school is seven teachers plus one headmaster, it can be only fifteen (fourteen teachers plus one headmaster) for a double-stream school. There would also be more efficient use of non-teaching staff and equipment.

Between the minimum and maximum enrolments, there will be an optimum level and assessment of this level will depend on judgements on such matters as teacher effectiveness and the type of curriculum, which are beyond the scope of this study.

In planning the school system, the practical value of notions of threshold and range and the relationship between them must be considered in conjunction with variations in population density and participation rates. Table 19 indicates, for different densities and participation rates, the number of potential pupils, i.e. the population aged 5–14 within the five km range of the school. This is found by taking the proportion of the population aged 5–14 (29.6 per cent) within the range at different densities. The area included in the range is 78.55 km². When the enrolment ratios are varied from 10 per cent to 50 per cent of the age group, the numbers to be enrolled at different densities can be given. The minimum threshold of 250 is reached where density is 107 per km² and the enrolment ratio is only 10 per cent of the age group; or where density is 53 per km² and enrolment is 20 per cent or where density is 35 per km² and the enrolment ratio is 30 per cent. But population density in most of the areas beyond the reach of a first-level school is less than thirty-five per km² and enrolment ratios are likely to be below 30 per cent, so that it is most unlikely that the threshold can be reached in areas which are, at present, beyond school range. It would not, therefore, be reasonable to recommend a policy of ensuring that the whole district is covered by the effective range of first-level schools.

TABLE 19. First-level school enrolment, population density and enrolment ratio

Population density per km²	Pop. aged 5–14	Enrolments				
		10%	20%	30%	40%	50%
10	233	23	47	70	93	116
20	465	47	93	140	186	233
30	698	70	140	209	279	349
40	930	93	186	279	372	465
50	1 163	116	233	349	465	581
60	1 396	140	279	419	558	698
70	1 628	163	326	488	651	814
80	1 860	186	372	558	744	930
90	2 093	209	413	622	826	1 035
100	2 325	233	465	698	930	1 163

3. School provision in Ankole

These theoretical considerations may be applied to the projected situation in Ankole for 1979. The enrolment ratio is assumed to be about 30 per cent throughout the district, so that there is relative equality of opportunity in all parts of the district and one of the features of the desired school map is thus achieved. Provision is gauged against projected variations in population density for 1979 (Table 20) and policies for a school map are discussed for three types of area:

A. Areas with a projected density of over 100 per km², high-density provision;
B. Areas with a projected density of 40–100 per km², medium-density provision;
C. Areas with a projected density of below 40 per km², low-density provision.

These areas are illustrated in Map 13.

TABLE 20. Population density by county, 1979

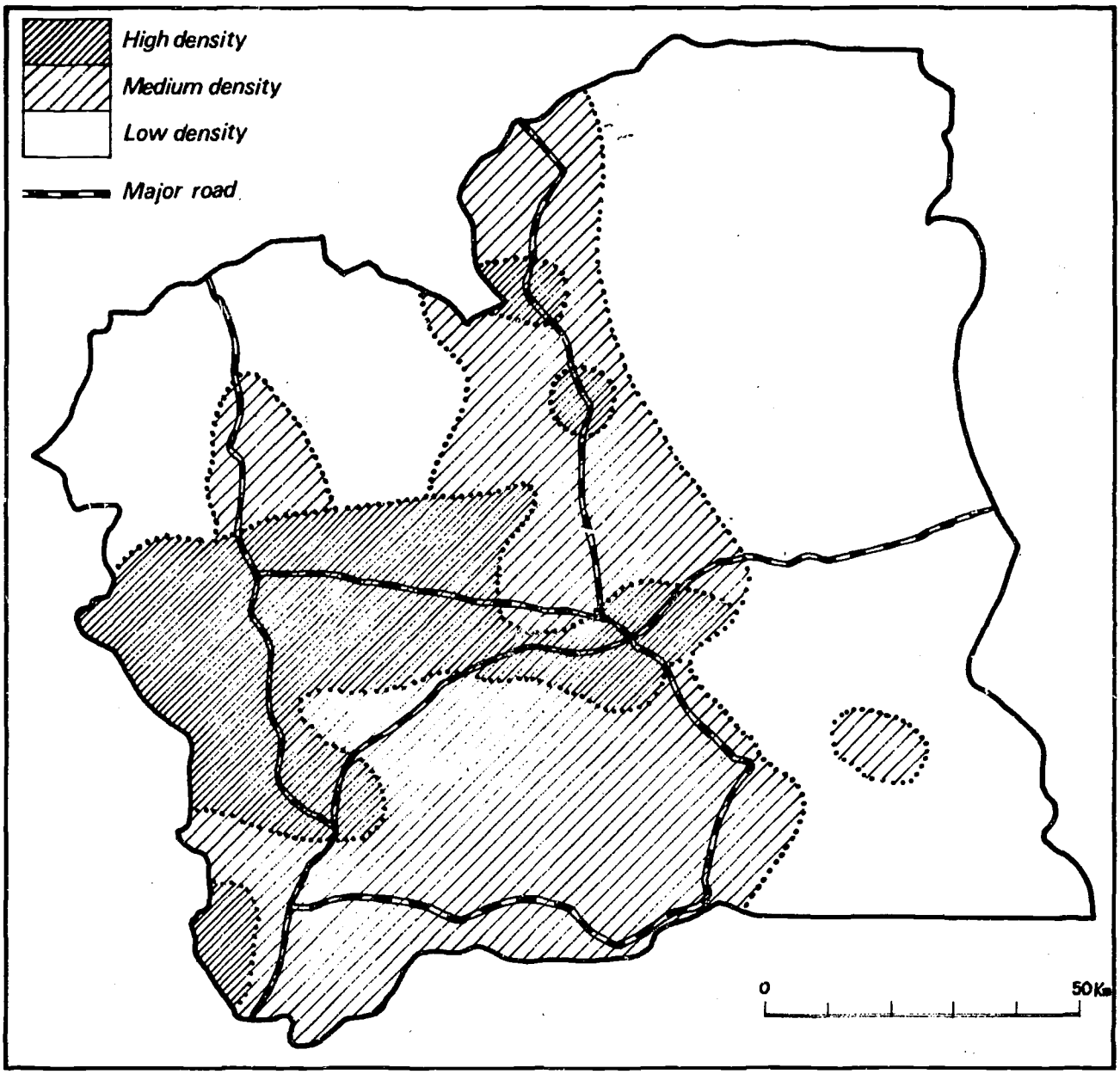
County	Density per km²	
	Low projection	High projection
Shema	174	192
Igara	140	155
Kajara	138	152
Kashari	132	145
Rwampara	116	127
Mitoma	77	85
Isingiro	67	73
Buhweju	44	49
Bunyaruguru	35	38
Nyabushosi	16	17
ANKOLE	79	87

A. HIGH-DENSITY PROVISION

This comprises the whole of Igara and Shema, those parts of Rwampara, Isingiro and Kashari near Mbarara, Rubindi *gomborora* in Kashari, Nyabuhikye *gomborora* in Mitoma and Ihunga and Bwongera *gombororas* and the extreme south-west in Kajara. In these areas the mean population density can be expected to be over 100 per km² in 1979. These are areas where there are many schools and all children live within the range of a government school (Map 6).

This being the case, there is no question of educational opportunity being denied because a child lives too far from a school. There is, therefore, the possibility of alternative strategies in expansion of enrolments for a more rational school map:

a) Intensify the existing network by establishing new schools. Where two existing schools are, for example, eight km apart, establish a new school half way between them. Each school will remain a one-stream school, but walking distances will be much reduced so that the catchment area will be smaller.



MAP 13. *Areas of first-level school provision in Ankole, 1979*

b) Retain the existing distribution of schools, but expand enrolments in each to two-stream level. The actual range will be unchanged but schools will expand towards the maximum threshold. If the enrolment ratio is 30 per cent the minimum threshold of a two-stream school is reached where population is above seventy per km².

The latter alternative is preferred. Not only will each school then be more efficient, with capital and recurrent (including salary) costs per pupil-place reduced, but the establishment of new government schools can be done only by extending support to existing private schools. Private schools, generally, have a cramped site and poor facilities and are inevitably closely associated with their foundation body. In high-density areas, where there is pressure on land for agriculture, good sites for new schools are at a premium. There is usually room for expansion on existing government school sites and scope for more intensive use of existing buildings.

Many areas do have two-stream schools in all but name. There are several *gombororas* which have a situation similar to that found in Kyeizooba and Rubindi, where there are two schools located on the same compound founded by and supported by the same mission. Kyeizooba Boys' school and Kyeizooba Girls' school and Rubindi Boys'

and Rubindi Girls' ought to be combined to operate as one school in each case. The boys' and girls' schools are, in fact, already mixed-sex schools in both cases, so the question of local opposition to having boys and girls together does not arise.

A rather similar situation occurs where there are schools established by rival missions near each other so that their catchments cover the same area. Even though such schools may be on opposite sides of a road or on different hill slopes and separated by perhaps half a kilometre, it would be possible to administer these as one school without difficulty, with one headmaster and one administration, even though there are two sites. With the amalgamation of a Protestant and Catholic school the authority of the DEO relative to the missions is strengthened and local rivalry can be reduced.

In the high-density areas planning to achieve a more rational school map involves adjusting the pattern of enrolments rather than the distribution of schools.

B. MEDIUM-DENSITY PROVISION

This area comprises those parts of Kajara, Rwampara and Kashari not included in the high-density provision areas, western Isingiro together with an island of medium density in central Isingiro, the whole of Mitoma except low-density Buremba *gomborora* in the north-east and high-density Nyabuhikye, most of Buhweju and those parts of Bunyaruguru near the main road and above the Rift Valley floor. Population densities in these areas in 1979 are likely to be between forty and 100 per km², but locally above and below these limits. At present there is a reasonable school provision and most children are within the range of a first-level school, but there are some areas outside the range (Map 6). It should be remembered, however, that not all schools shown in Map 6 have classes to P.7, so that there are larger numbers living beyond the range of a P.7 class.

Where there is a population density of over forty per km², there is sufficient enrolment to support a one-stream school above the minimum threshold of 250. Where population density is below 100 per km², the two-stream school threshold is not reached unless pupils come from beyond the five km range. A policy of expanding existing schools to two-stream entry cannot be advocated for these areas. Expansion of enrolments must begin by extending the government system so that all homes are, firstly, within the range of a government school and, secondly, within range of a P.7 class. The DEO's existing policy of upgrading all government schools to the complete P.1–7 range should be pursued and government support can be extended to a few private schools in those areas beyond the range of a government school. If private schools in such areas are inadequate it may be necessary to establish new schools.

The wastefulness of mission rivalry with two schools near each other is greatest in medium-density areas. Neither school can maintain itself above the minimum threshold without enrolling pupils from outside the range. Government support ought to be witheld from one of the schools and its pupils transferred to the other. It is impossible to state general guidelines, for each case must be considered on its merits.[1]

C. LOW-DENSITY PROVISION

This comprises the low-density counties of Nyabushosi and Isingiro (except those areas included in B), the rift-valley floor in Bunyaruguru, together with the high and isolated Buhweju/Bunyaruguru border area. Population densities in these areas will be below forty per km² in 1979. The existing school map clearly illustrates that these areas are very poorly served, with isolated islands of provision surrounded by large areas beyond the range of a school (Map 6, p. 25).

The minimum threshold-enrolment is not reached where densities fall below forty per km² and the enrolment ratio is 30 per cent. There is a lack of demand for schools and many pupils live beyond the range of a school. Providing a first-level school for the relatively few children in areas of very low density necessitates solutions that are quite different from those advocated above. Four such solutions present themselves:

a) Biennial intakes into schools, with entry into P. 1 every second year instead of every year. This system attempts to solve the problem by having the age group, and hence the population within the range, effectively doubled and the threshold population density effectively halved. Biennal intakes require considerable organization and have been recommended for low-density areas in several reports, but have never really been attempted.
b) Boarding schools. There is one first-level boarding school in Ankole, at Kazo in Nyabushosi. Kazo had a total enrolment of 459 in 1971, with some double-streaming, and the majority of the pupils are boarders. This is a Church of Uganda foundation that enjoys a very high reputation throughout the district. It is clearly a very satisfactory arrangement in a *gomborora* where population density was fifteen per km² in 1969. Many pupils come from Nyabushosi. Boarding accommodation is however very expensive and, given the financial stringency of education in Uganda, this cannot be recommended as a general solution.
c) Bussing. This solution, much used in other countries, is compieteiy impracticable because low-density areas are also characterized by lack of roads. Pupils live more than five km from a road, as well as five km from a school.
d) Movement into the range of a school. Evidence has been presented to indicate that a relatively common phenomenon in Ankole is for a pupil to leave his home during term-time to live with relatives or clan members whose homes are within the range of a school. Residential mobility is relatively easy and occurs in the low-density areas with pupils leaving home to live near a school. In

1. If no precise suggestions or even general guidelines are stated, it is basically due to the absence of systematic analysis of the 'quality of educational service' by institution. (IIEP).

The range in the quality of education provided in government first-level schools is probably less than the variation in government second-level schools. However, where first-level schools are day schools, it is questionable that variations in school quality have any great effect on the daily range of a school. One effect might be to encourage pupils to leave their homes during term time in order to live with relatives near a good school rather than stay at home near a less good school. (W. T. S. Gould)

the Rubindi survey, four pupils whose homes were in Nyabushosi and two pupils from Bubaare were recorded as having term-time homes with relatives near the school they attend.

The last is the most satisfactory of the four possible solutions. It will occur spontaneously, but will not absolve the DEO of the responsibility of ensuring that the opportunity to attend school is not denied for the sole reason that the pupil lives too far from a school and cannot move to live with relatives within the range. Admission to boarding at Kazo should be reserved as a priority for such children and those attending Kazo, whose home is near another school, should be denied admission as boarders and admitted to their nearby school.

Within the low-density areas it may be possible to establish some new schools. Population densities are increasing most rapidly in these areas and minimum school thresholds will be reached in more *gombororas*, e.g. in the rapidly growing Kashongi *gomborora* of Nyabushosi. Associated with the rise in densities is the decline in available grazing land and a change in traditional patterns of pastoral mobility. More and more homesteads are permanently sited, so that the opportunity to establish permanent schools is much greater. Recent developments in cattle ranching, such as the Ankole Ranching Scheme, and the entry of the money economy into traditional pastoral life, will inevitably result in a rise in money demand, as cattle are increasingly seen as items from which income may be derived. Evidence has already been presented that showed Nyabushosi to be the county with the highest percentage of total first-level school enrolments in private schools in 1969. This does not substantiate the findings of Murray's (1970) survey that pastoralists' antipathy towards education lowers the demand for schools.

4. Applying the policies

Specific examples of the application of these criteria in planning a more rational map may be given for the three *gombororas* surveyed in detail.

A. KYEIZOOBA (Map 8, page 30)

Since this *gomborora* is relatively well provided with schools and since population growth is not likely to be at a very high rate, any increase in enrolments ought to be small. It will be unwise to pursue the policy of expanding Ntungamo, at present government-supported in P.1 and P.2, to the full P.7 range. This school is well within the range of four existing P.7 schools—Ruyonza at one km distance, Bweranyange at two km (in Kitsibo *gomborora*) and the two schools in Kyeizooba at four km. The P.7 class at Mwengura ought to be given government support.

As already discussed, Kyeizooba Boys' school and Kyeizooba Girls' school ought to be combined into one school. This will free one of the two headmasters for the classroom or to use his experience as headmaster in another school. Even with this amalgamation there is a case to be made for adding a third stream at this site, and this would be justified in an area where both the population density and the enrolment ratio are high. Since the range of the school at this central point includes most of the population of the *gomborora* (Map 11, page 35), this solution would seem to be preferable to doubling enrolments at Kantojo (which in any case has a very restricted site) or at Mwengura. Pressure for further expansion of the Kyeizooba schools is shown in the following extracts from a letter from the headmaster of Kyeizooba Boys' school in the DEO's expansion file:

WE WON'T SET TESTS

To all Church Schools,

In view of our classes being full to the brim, 50 to 55 pupils in each class, we shall not invite your top classes this year to sit annual tests with ours. This is due to the fact that we don't intend to enroll more pupils in our classes, except P.1, for the year 1971. This is quite regrettable. But we have no double streams to accommodate the large number of pupils we receive each year from the villages around. I shall convey this to the Management Committee to view. Perhaps it will be a temporary measure.

The purpose of this early notice is to enable you to arrange with other nearby P.VII schools for your pupils next year.

Copy to: DEO, P.O. Box 24, Mbarara
To note our need for more class streams.

B. RUBINDI (Map 9, page 30)

Enrolments in Rubindi need to increase considerably, for not only is the area relatively poorly served at present, but population growth is likely to continue at a very high rate. The following changes, in order of priority, ought to be made to the school map:

a) Up-grade Buyenje, at present P.1–P.5, to a full P.7;
b) Establish a new school in the north-east of the *gomborora*, probably at Nsiika Church School, which is one of the schools which has applied for government support;
c) Up-grade Nombe and Munyonyi to P.7;
d) Increase enrolments per class in all schools to an average of forty;
e) Amalgamate Rubindi Boys' and Rubindi Girls' schools;
f) Introduce a double stream in Buyenje or Munyonyi or add a third stream to the amalgamated Rubindi school;
g) Up-grade Rweibare to P.7.

The first two suggestions a and b are given top priority, for they will provide a school in areas at present outside the range of a P.7 school (Map 12, page 35). Population densities in these areas are sufficiently high, so that the threshold level will be reached. Class size in all Rubindi schools is at present well below the desired average of forty and the first effort at expansion of enrolments needs to be directed towards rectifying this inefficiency. Government support should be extended to grade P.7s at Nombe and Munyonyi. The amalgamation of Rubindi Boys' and Girls' has already been discussed.

These changes would not be sufficient to increase enrolments to the desired level. Evidence has been presented to indicate that the main population growth areas are in

the parishes to the west of the main road in the catchment areas of Rubindi, Munyonyi and Buyenje. It is in these schools that double streaming should be introduced to allow for population increase. This ought to have higher priority than increasing enrolments by expanding Rweibare to P.7, and both are preferable to further expansion at Nombe.

C. BUBAARE (Map 10, page 30)

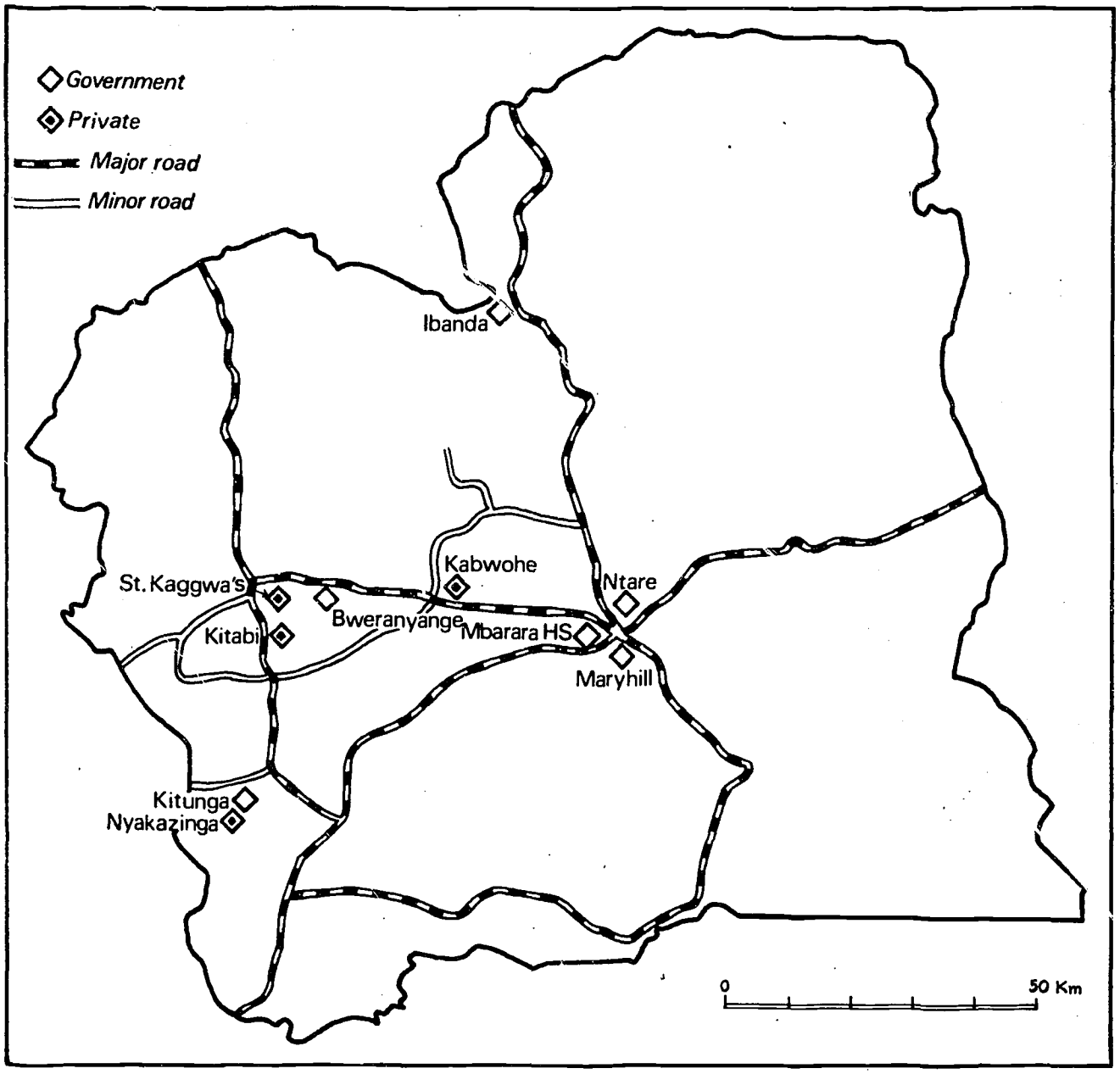
The very low population densities in this *gomborora* necessitate that some parts must remain outside the range of a first-level school and densities are not sufficient within the catchment area of Rwentanga, the only P.7 school in 1971, to justify double streaming. P.7 enrolment can be doubled by allowing Kashaka to expand to the full range. Government support should also be given to one of the church schools in the north-west of the *gomborora*, at Kamushoko, although density and enrolments may not be sufficient to support a complete seven-grade school.

5. Conclusion

The example of these three *gombororas* provides some general indication of the development of the school map at the micro-scale. Much clearly depends on local circumstances—not only of population densities or enrolment ratios, but also of local barriers to movement, such as swamps or hills, and features encouraging movement such as roads or paths and markets or trading centres. Only with a detailed knowledge of the geography of any small area can the first-level school map be made more satisfactory.

The inadequacy of available data on the present distribution of first-level school enrolments in Ankole prevents detailed mapping of how much expansion is needed in each *gomborora* or even each county. Each area has its own problems, but some general guidelines have been established to make possible a more systematic approach to rationalizing the school map. By 1979 it should be possible to reduce inequalities in provision within the district, even if the district enrolment ratio does not rise.

If resources become available to increase enrolments at a faster rate than the school-age population is increasing and there are, therefore, higher enrolment ratios, the density levels that were given as the limits for the different expansion strategies will change. If the enrolment ratio were to be doubled to 60 per cent of the 5–14 age group, the minimum threshold level would be reached where density was twenty per km². The first priority would then be to build more schools in sparsely populated areas of Nyabushosi, Isingiro and Bunyaruguru and double streaming would become feasible where population density rose above fifty per km².



MAP 14. *Second-level schools in Ankole, 1971*

PART THREE
VI. The second-level school system in Ankole

The educational pyramid in Uganda is such that the enrolment in second-level education (S.1–4) is much lower than in first-level education. Priority in educational expansion since Independence has been given to second-level education as part of the general policy of greatly increasing the stock of skilled manpower. As with first-level schools, it is impossible to be precise about even national enrolment ratios, owing to statistical deficiences of notional and actual age groups not corresponding and a large private sector of education being unrecorded in official data. It is reasonable to believe that less than 10 per cent of the notional age group 12–16 is enrolled in second-level schools of all types in the country as a whole and that the enrolment ratio for Ankole is lower than the national average.

In 1971 there were ten institutions offering second-level education in Ankole. Six of these are government controlled and the other four remain privately administered and financed. Three of these, all government schools, are in or near Mbarara town and the other seven lie to the west (Map 14).

1. Government schools

Most of the seventy-three government second-level schools in Uganda in 1971 (Map 15) were founded by voluntary agencies, principally the Church of Uganda and various missionary orders of the Catholic Church. Very few were founded by direct government initiative, but, by successive legislation and increasing financial interest, the government has taken over the control of mission schools.[1] This government system forms the basis for sectoral planning linked to manpower requirements and in the 1960s the growth of enrolments in government second-level schools (S.1–4) was extremely rapid, rising from 7,400 in 1962, the year of Independence, to over 40,000 by 1970.

The officially prescribed class size is forty pupils and this is maintained throughout all grades, for drop-out rates from S.1 to S.4, unlike those in first-level schools, are very low. Once a pupil gains a place in a second-level school he is likely to remain in the school until S.4. All pupils pay fees of about 400 shs. to 600 shs. per year, actual fees varying from school to school. Many pupils have their fees paid in whole or in part by bursaries given by the district authorities.

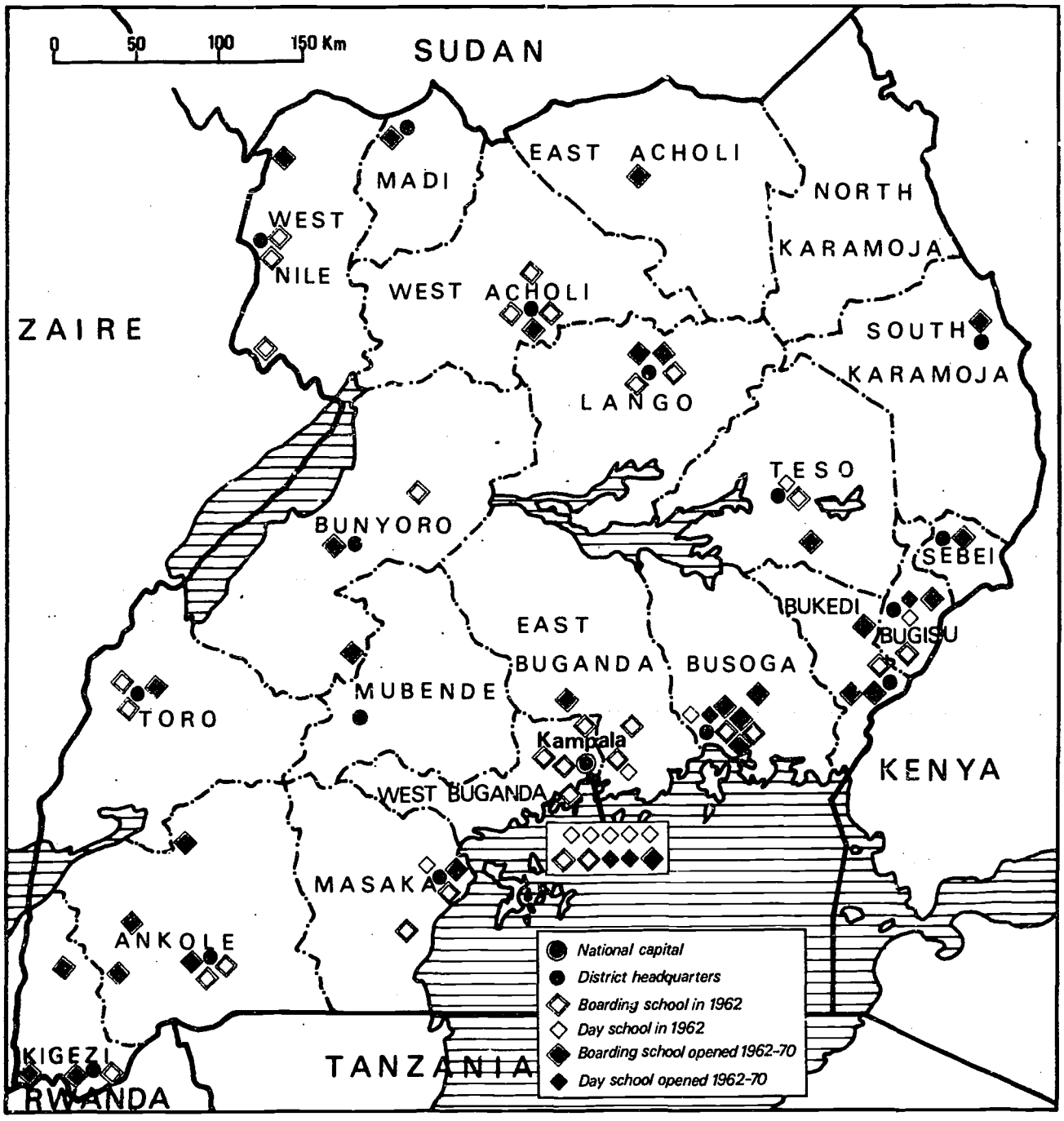
The quality of buildings and other facilities in the government schools is much higher than is often expected in a poor country, and well up to the general level of many schools in Western Europe. This means, however, that costs per pupil-place are very high, especially when compared with the *per capita* income in the country.[2] The best facilities are in the old-established schools and those with Higher School Certificate classes, but most of the newly established schools have had new buildings and equipment from World Bank and other aid loans.

These schools follow an academic curriculum with compulsory English, mathematics, general science (or physics-with-chemistry and biology as separate subjects), history and geography with other language and technical alternatives. A large proportion of the teaching staff is expatriate, amongst whom the largest number are British teachers recruited by and partly financed by the British government, and there are volunteers from several nations including the USA, Canada and the Scandinavian countries. The number of Ugandan teachers has increased dramatically in recent years. Many are graduates, but the largest group are designated grade V teachers, with two years' teacher training at the National Teachers' College in Kampala after leaving second-level school at grade S.4. or S.6. The six government second-level schools in Ankole present an interesting cross-section of the schools in Uganda.

i. Ntare School

This is the only school in the district to have been founded by government initiative with government finance. It was established as a boys' boarding school in 1956 as one of the new government second-level schools which were established about the same time in several districts of Uganda where there had been no second-level school previously. Other schools in this category include Butobere near Kabale, Kigezi; Kabarega in Masindi, Bunyoro; and Sir

1. See R. Jolly, op. cit. (pp. 50–52).
2. Ibid, (pp. 94–95).



MAP 15. *Second-level schools in Uganda, 1971*

Samuel Baker in Gulu, Acholi. Ntare is now the leading school in the district with high entry qualifications and very impressive examination results. It is the only school in Ankole with sixth-form classes. Although the school remains a boarding school, there have been in the past few years a small number of day pupils who live in Mbarara. The school is situated on the outskirts of the town and has all facilities—water, electricity supply, etc. There is some room to expand the school on its present site. At present there are three streams in S.1–4, together with two science classes and one arts class in each of S.5 and S.6.

ii. Mbarara High School

This is the oldest school in Ankole, having been founded by

the Church Missionary Society in 1910.[1] It lies about two kilometres west of the town centre on the compound of the Church of Uganda cathedral and Diocesan headquarters. Although it is an old-established school, there were no second-level classes until 1963, but now it is the largest school in the district with four streams in each grade of S.1–4. The school is a boarding school for boys only and in recent years has benefited from the construction of some new buil- ..gs as part of the World Bank loan for Uganda second-level education. It has also benefited from a grant from refugee organizations for the construction of buildings on the understanding that the school would accept a large number of refugees.

iii. Kitunga

This school was established as a senior second-level school in 1965, but before that it had been a junior second-level school. In the re-organization of the educational system that took place in Uganda in 1965–66, the first-level school course was lengthened from six to seven years and the two-year junior second-level course abolished, so that there was entry to senior second-level from P.7 instead of J.S.2 or P.8. Some junior second-level schools were up-graded at that time to senior second-level. Kitunga was one of these. It is a Church of Uganda foundation, lying within one kilometre of the *saza* headquarters of Kajara at Rwashamaire about ninety kilometres south-west of Mbarara. The school is entirely boarding, with three streams of boys in S.1–4. It has its own water and electricity supply and, like Mbarara High School, has new World Bank buildings.

iv. Ibanda

Another of the schools up-graded to senior second-level status with the abolition of junior second-level education. It had its first intake of senior second-level pupils in 1966. The school is on a large Catholic mission compound with a hospital, teacher-training college and several first-level schools, which are all served with common water and power facilities. It lies about two kilometres from Ibanda village and seventy kilometres north of Mbarara on an all-weather laterite road. It is a boys' boarding school with three streams in S.1–4.

v. Bweranyange Girls' School

Situated about three kilometres from Bushenyi in densely-populated Igara county. Like Ibanda and Kitunga it was a junior second-level school and in 1965 had its first intake of senior pupils. It is a girls' boarding school founded by the Church of Uganda and is on a restricted site on the top of a hill, with all that implies for difficulties of water supply, but there are many new World Bank buildings. There are three streams in S.1–4.

vi. Maryhill High School

This is a girls' boarding school on the outskirts of Mbarara in the compound of the Catholic diocese of Mbarara. At Independence in 1962 it was, apart from Ntare, the only senior school in Ankole, and even today remains the only government girls' school of Catholic foundation in the Western Region. There are a few day-pupils in the school, which has three streams in S.1–4.

2. Private schools

There were seventy-four registered private second-level schools in Uganda in 1971, compared with the seventy-three government second-level schools. Although detailed statistics on enrolment in private schools are not available, the total enrolment is considerably less than in government schools. However, there are, in addition, an unknown number of unregistered second-level schools. It is, therefore, impossible to calculate directly the size of the private second-level system, but it may well be that enrolment in the private system matches enrolment in the government system.

Private schools are of three types:

a) Voluntary agency schools: these are still controlled entirely by the missions;
b) Parents' schools: in which the initiative in founding was taken by pupils' parents, often with support from the voluntary agencies;
c) Individual's schools: in which the founding was done by an individual entrepreneur and the school is operated as a business to make profit. There are many schools of this type in Kampala.

There is a great range in the quality of education offered in private second-level schools and it is certainly greater than the range in the quality of government schools. Some mission schools and individual's schools in Kampala are of a comparable quality to government schools, but others fall well below this level. Poor quality is evident in three particular respects:

a) Quality of buildings and other facilities. Private schools are often newly founded and have not had the opportunity to build up a reasonable stock of buildings and equipment. These schools have not had the benefit of aid money that has been given to government schools. Despite higher fees, private schools remain poor and function on a shoe-string budget.
b) Quality of teachers, also stemming partly from the financial constraints. Private schools cannot afford the salaries of graduate teachers or even the non-graduate second-level-trained (grade V) teachers and many have a staff of trained first-level school teachers or S.4 leavers who have not been able to find other employment. The situation is especially bad in parents' and individual's schools, for, in mission schools, clergy and overseas volunteers are often available.
c) Quality of pupils. Pupils who attend private schools are those who have failed to find a place in the government system, or even in a government teacher-training college or vocational institution. Given also that fees are generally higher, there is greater social differentiation for only the rich will be able to attend.

In Ankole in 1971 there were four private schools with second-level classes:

1. See T. Watson, op. cit.

i. Kabwohe

A school supported by the Church of Uganda and parents of local children. It is situated near the Mbarara-Bushenyi road some thirty kilometres from Mbarara in a densely-populated area of Shema county. The school is on a Church of Uganda compound, but it is hampered by a lack of finance in constructing much-needed buildings to cater for the pupils that the school would like to have. There is no boarding accommodation and there are boy and girl pupils in all the classes from S.1–4.

ii. St Kaggwa's

Established in 1968 by a Catholic priest within three kilometres of Bushenyi. It has classes from S.1–4, with boarding accommodation for boys, but some boys and all the girls attend the school as day pupils.

iii. Nyakazinga

This is situated in Kajara county near Kitunga school. It is a school established by an individual entrepeneur to meet the undoubted demand for second-level education in that area. The school is a day school, but is at present in severe financial difficulties, with very poor buildings and other facilities.

iv. Kitabi

This is a very specialized institution since it is primarily a seminary for the training of boys for the priesthood, but the pupils all pursue the standard senior second-level course and some do not proceed to the Church at the end of it.

Two of these—Kitabi and St. Kaggwa's are officially registered, but the other two—Kabwohe and Nyakazinga—are not. For the purposes of this report Kitabi Seminary has been omitted as it is a specialized institution where providing second-level education is not its main function.

The three remaining schools provide considerable contrasts. St. Kaggwa's is a Catholic school that is largely a creation of the present headmaster, a Canadian priest who has served in Ankole for several years, until 1968 as a parish priest. Other members of his staff include graduate volunteers, making it the school with the best-qualified staff of the three.

Kabwohe is primarily a parents' school, but with a strong component of Church of Uganda assistance. The school is sited on church land and the church has given some financial assistance, but most finance and construction have come from local effort. Teachers are mostly trained first-level school teachers.

Nyakazinga is the smallest of the three, the most recent and in the greatest financial difficulties. It was established in 1969 by the present headmaster.

Of the three, only St. Kaggwa's has boarding accommodation, but the location of all three schools in high population density areas of the district and near many first-level schools is implicit in their having day pupils and indicates the nature, if not the extent, of the effective demand for second-level education in these areas.

3. Distribution of schools and the second-level school map

Table 21 summarizes the main features of the second-level schools of Ankole that are relevant to a discussion of the importance of the existing distribution of schools for the purposes of the school map. In a district where enrolment ratios are very low and population densities are low over large areas, it has been necessary to have boarding schools for there has not been a sufficiently large number of qualified pupils within daily commuting distance of a school. Pupils leave home to live in school during term time and, in this way, large schools of three or four streams of forty pupils in grades S.1 to S.4, i.e. a total enrolment of 480, can be maintained. Pupils are not obliged to attend the school nearest their home. Boarders in Ankole schools come from all parts of the district and beyond and some pupils from Ankole are at school in other districts. The distribution of boarding schools is no guide to the distribution of pupils' homes.

All six government schools in Ankole are entirely or predominantly boarding schools. With the one exception of Mukono Secondary School in East Buganda, the few

TABLE 21. Second-level schools in Ankole, 1971

	Present status					
	Government			Private		
Foundation body	Boys only	Girls only	Mixed	Boys only	Girls only	Mixed
Church of Uganda	Mbarara H.S. (B) Kitunga (B)	Bweranyange (B)	—	—	—	Kabwohe (D)
Catholic	Ibanda (B)	Maryhill (B.D.)	—	Kitabi (B)	—	St. Kaggwa's (B.D.)
Government	Ntare (B.D.)	—	—	—	—	—
Private	—	—	—	—	—	Nyakazinga (D)

B = boarding only; D = day pupils only; B.D. = mostly boarding and a few day pupils.

government day schools in Uganda are in urban areas.[1] In a general sense, therefore, the distribution of government schools is of limited relevance for the distribution of educational opportunity. It would be possible to have all second-level schools concentrated in one area of Uganda without necessarily affecting the distribution of second-level opportunity between or within districts, for the same pupils would gain places in a government school regardless of the distribution of these schools. Statements by Ministers during 1971, promising new second-level schools in such unlikely areas as North Karamoja, have a political impact, but do not increase the chances of pupils from these areas going to them. Because there are so few first-level schools in this remote and very backward area of north-east Uganda, few pupils enrolled in the second-level school at Moroto, chief town of the area, come from Karamoja. Most come from Teso and Acholi districts.[2]

The distribution of day second-level schools is of more direct relevance for analysing the school map, and most private schools are day schools. At the general level, the existence of private schools indicates that there is a demand for second-level education beyond that supplied by the state, even when this involves high fees, poor facilities and little chance of success in examinations; at the local level they provide some indication of the distribution and nature of demand, particularly whether and where day schools are feasible. In Ankole, Kabwohe and Nyakazinga are day schools; all girl pupils and a few of the boys at St. Kaggwa's are day pupils. These schools are more directly affected by the distribution of demand than the government schools, and they are of value in the identification of planning criteria for the development of the school map.

1. See W. T. S. Gould, *Movements of schoolchildren and provision of secondary schools in Uganda* (Paper presented at the International African Institute Seminar on Town and Country in Eastern and Central Africa, Lusaka, Zambia, 1972)

2. It could be argued that new second-level schools even in North Karamoja have more than a political impact and can increase the chances of pupils from these areas going to them. This point is further demonstrated in the discussion on distance on page 63. (IIEP)

VII. Determinant factors in enrolment

The school map is more than a map showing the distribution of schools, for it includes the link between the school and the pupil. It is essential, therefore, to consider this link in an analysis of the distribution of second-level school enrolments and patterns of home/school movements.

1. Entry regulations

Entry to government second-level schools in Uganda is on the basis of a national first-level leaving examination. This examination is checked centrally and the top 14,000 pupils, out of about 80,000 candidates, qualify for a place in grade S.1 in a government school. The rest can go to private second-level schools or to other institutions, such as teacher-training colleges and vocational schools, but the large majority become 'P.7 drop-outs'. Selection of those who pass for government school is solely on the basis of examination performance—there are no regional quotas.

The selection procedure that was in operation over ten years ago remains unchanged at the present time. 'When the examination results are known, a minimum mark is determined to qualify a candidate for consideration for entry to a secondary school and all candidates above that mark are listed in order of merit. A meeting of all heads of schools is then called under the chairmanship of the Chief Inspector of Schools and, starting from the top, the candidates are "off ed" to the schools in order of their choice, the purpose being to ensure that no worthy candidate fails to find a place. A small margin is left to allow for special cases subject to the approval of the Chief Education Officer.'[1]

On the form of application for admission to second-level school there are questions on the candidate's age, sex, home location, his father's occupation—in addition to being required to select six schools in order of preference from the list of the seventy-three government schools in Uganda. There is no stated restriction on the choice of school, except that certain schools are boys or girls only, but pupils are warned that if they choose a day school they should have regard to problems of finding accommodation in the town where that day school is situated.

2. Patterns of home/school movement

Given a choice of all the second-level schools in Uganda, it is inevitable that there is considerable movement of pupils away from the area in which they sat the first-level leaving examination. The Ministry of Education collects data from each second-level school on the breakdown by region of where the pupils sat their first-level leaving examination and Table 22 summarizes this information for 1970 according to the region in which the school is situated.

Clearly there is net movement out of the Western Region for, with 26 per cent of the total population, it has only 19 per cent of second-level school places. However, about three-quarters of the pupils remain in the same region as their first-level school.[2]

This is the most refined data collected nationally on the geographical origins of second-level pupils and it is clearly inadequate for the purposes of the School Map Project. For Ankole pupils other data are available:

a) In the Ankole district administration there is a record, by school, of pupils from Ankole receiving financial aid. Table 23 lists the top thirty-two schools, in ranked order by number of pupils in S.2–4, receiving Ankole District Administration support. This is clearly inadequate as a complete source, for not only does it omit S.1, S.5 and S.6 pupils, but some pupils receive no support. Forty-seven per cent of the total of 2,015 Ankole pupils in receipt of aid attend the six Ankole schools. The five most highly ranked schools are in Ankole and the sixth Ankole school, Maryhill, is ranked eighth.

   The next group is of two types: (*i*) schools in nearby districts, Toro, Kigezi and Masaka (24.9 per cent of pupils) and (*ii*) day schools in Kampala (15.6 per cent). The number of Ankole pupils declines with distance from Ankole, but the maximum reach extends as far as Moroto in Karamoja and Tororo Girls' School in Bukedi.

b) Further information is available from the second-level school application form. All pupils taking the first-level

1. See J. D. Chesswas, 'Educational planning and development in Uganda' in *Educational development in Africa*, Vol. I, Paris, Unesco:IIEP, 1969 (p.43)
2. See W. T. S. Gould, *Movements of schoolchildren...*, op. cit.

TABLE 22. Inter-regional movement of pupils to second-level schools, 1970

Region of second-level school	Region of P.7 examination					
	Buganda	Eastern	Northern	Western	Outside Uganda	Total
Boys						
Buganda	5 787	1 005	924	2 442	215	10 373
Eastern[1]	325	8 046	898	284	49	9 602
Northern	49	199	4 265	94	5	4 612
Western[1]	217	160	431	4 496	46	5 350
TOTAL	6 378	9 410	6 518	7 316	315	29 937
Girls						
Buganda	2 806	917	137	624	54	4 540
Eastern[1]	184	1 893	220	105	9	2 411
Northern	59	117	952	91	1	1 280
Western[1]	73	12	17	1 300	1	1 403
TOTAL	3 124	2 990	1 326	2 120	65	9 634

1. Incomplete; one school in each region did not provide a regional breakdown of pupils.
SOURCE Ministry of Education, Kampala

leaving examination fill in this form in triplicate, one copy remaining with the pupil, one copy going to the school where the first-level leaving examination is taken, while the third form is sent to the pupil's first choice of second-level school. At the national selection meeting this third copy will be given to the school which finally accepts the pupil, if it is not the first-choice school. Each second-level school, therefore, has a complete set of these forms for all pupils in the school, but they are confidential and access to them is not always possible. Their chief disadvantage, however, is that certain crucial information, especially the pupil's religious affiliation, is omitted and their value for subsequent analysis is therefore limited.

The lack of data on the geographical origins of second-level school pupils is further evidence of the lack of interest in and concern for the distributional aspects of the educational system in Uganda. Without going to each of the government schools scattered throughout the country, it is impossible to calculate the number of pupils from Ankole in second-level schools.

It is much more difficult to have an indication of the distribution of pupils' homes within Ankole. The 1969 census data on educational status was sampled in such a way that even county estimates are statistically invalid and will not be published. The best approximations that can be given are by surveys carried out by the author in the second-level schools of Ankole and in schools in Kampala which, as shown in Table 23, attract many pupils from Ankole. The pupils enumerated in these surveys account for approximately 60–70 per cent of all S.1 pupils from Ankole and give some preliminary indication of the pattern of second-level school opportunity in the district.

The breakdown of pupils by county may be compared with the distribution of population aged 15–19 (Table 24). Buhweju, Bunyaruguru, Kajara, Nyabushosi, Rwampara and Shema provide fewer pupils than the district average; Mitoma has the greatest excess of enrolment over population. These comparisons are a reflection more of the numbers of pupils enrolled in first-level school (Table 3) than of the distribution of second-level schools. Given the present system of admission to second-level school, providing new schools in Rwampara and Buhweju would not necessarily mean having more pupils from those counties in second-level school, for these counties have relatively fewer pupils

TABLE 23. Ankole District Administration: awards and scholarships by school, 1971

School	District	No. of awards S.2–3–4.
1. Mbarara H.S.	Ankole	242
2. Ibanda	Ankole	171
3. Bweranyange	Ankole	164
4. Ntare	Ankole	149
5. Kitunga	Ankole	136
6. Kitante	Kampala	94
7. Aga Khan	Masaka	87
8. Maryhill	Ankole	84
9. Kinyasano	Kigezi	77
10. St. Leo's	Toro	75
11. Kako	Masaka	65
12. Nyakasura	Toro	60
13. Old Kampala	Kampala	56
14. Kololo	Kampala	49
15. Kigezi H.S.	Kigezi	42
15. Lubiri	Kampala	42
17. Kibuli	Kampala	41
18. Mengo	Kampala	33
19. Kyebambe	Toro	30
20. Mukono	East Buganda	29
20. Kyambogo	Kampala	29
22. Jinja	Busoga	27
23. Kitovu	Masaka	26
24. Kisubi	West Buganda	22
25. Mutolere	Kigezi	19
26. Butobere	Kigezi	18
27. Kabarega	Bunyoro	17
28. Nabbingo	West Buganda	16
29. Gayaza	West Buganda	14
29. Budo	West Buganda	14
29. Ndejje	East Buganda	14
32. Mwiri	Busoga	13

SOURCE IIEP survey

TABLE 24. Ankole pupils enrolled in S.1 by county, 1971

County	In Ankole schools	In Kampala schools	Total	% of total	Population aged 15–19	% of total
Buhweju	3	3	6	1.11	2 328	3.20
Bunyaruguru	1	1	2	0.37	2 205	3.03
Igara	73	25	98	18.08	11 817	16.24
Isingiro	56	22	78	14.39	8 760	12.04
Kajara	35	17	52	9.60	8 534	11.73
Kashari	51	14	65	11.99	7 857	10.78
Mitoma	68	10	78	14.39	6 424	8.83
Nyabushosi	13	3	16	2.95	2 802	3.86
Rwampara	68	14	82	15.13	12 777	17.57
Shema	45	20	65	11.99	9 254	12.72
ANKOLE	413	129	542	100.00	72 757	100.00

SOURCE IIEP survey and *Report on the 1969 population census*, op. cit.

doing sufficiently well in the first-level leaving examination to warrant a place in a government school.[1]

3. Second-level school survey

Existing data are clearly deficient for analysis of the existing second-level school map in Ankole. There is a need for much more detailed and more spatially disaggregated data, for without these the details of the school map at the individual level cannot be seen. In order to derive suitable data for the study of the spatial structure of second-level education in Ankole, it was necessary to devise and administer a questionnaire to be filled in by pupils in the schools. The following information was required from individual pupils:

a) exact location of the pupils's home;
b) male or female;
c) religious affiliation;
d) first and second choice of second-level schools.

These questions provide a basic framework for factors affecting the choice of second-level school, and thereby the extent of the catchment areas of individual schools. A questionnaire (Appendix I) was distributed to all S.1 pupils in seven second-level schools in Ankole—each of the six government schools and one private school, St. Kaggwa's, Bushenyi.[2] Apart from the ease of doing this, with all pupils in one class answering the questions at the same time, it provided information on a stratified sample of one quarter of the school population, which was considered as equally representative of the whole as a random sample and would enable inter-school comparisons of the same group. The view that the samples are representative of the schools as a whole is supported by comparing the breakdown by region of the surveyed population with the total school population, as recorded in the 1970 official returns (Table 25). Percentages from the Western Region are, in general, lower in the sample than in the population as a whole, due probably to the newer schools becoming more widely known. The greatest difference occurs in Ibanda with ten pupils in the sample from the Eastern and Northern Regions. Another reason for the S.1 stratified sample being used was the assumption that the retrospective information asked, particularly on choice of second-level school, would be fresher in the pupils' minds, allowing less possibility of error.

The questionnaire encountered considerable difficulties over the definition of pupils' homes. The relevant question asked was: 'Where is your parents' home?' but this was open to several interpretations:

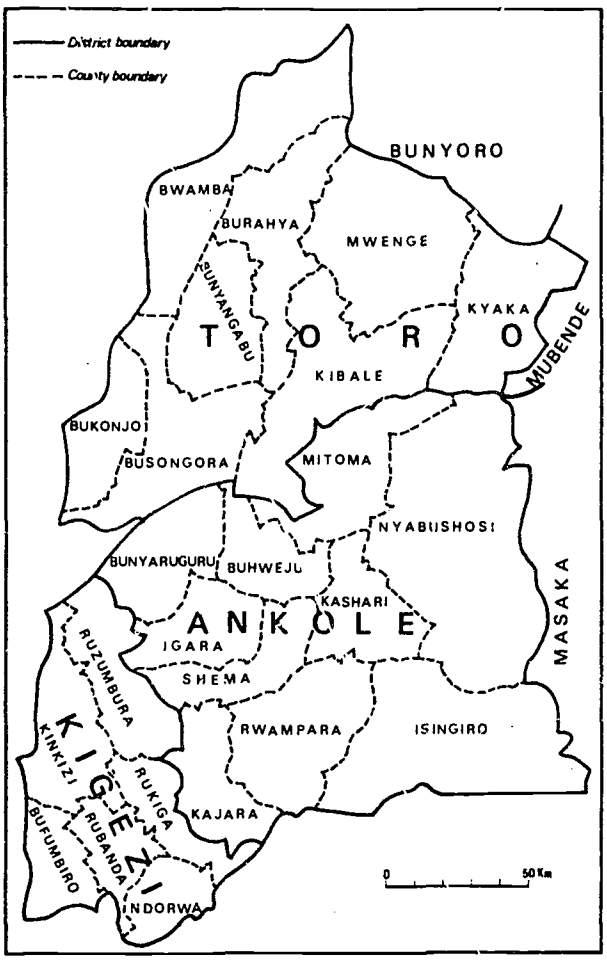
1. See footnote 2, page 57. The whole subject of the rate of admissions to S.1, which is related to the existing supply and thus strongly concerns the policy on the expansion of the non-governmental sector, is most appropriately discussed here. It is understood, however, that a comparative study of second-level admissions policies in Uganda, Tanzania and Zambia is at present being prepared and the results should fill this gap. (IIEP)
2. While St. Kaggwa's cannot be regarded as fully representative of the private sector, it is still illustrative of some general points, as follows:
   a) Private boarding schools exist and have catchment areas wider than the immediate locality;
   b) The catchment area of a private day school is not confined to the daily commuting range of the school. Pupils move from unserved areas to live within the range of the school.

   In general, the distribution of private second-level schools does not directly reflect the distribution of demand, but there is clearly a stronger relationship than for government schools.

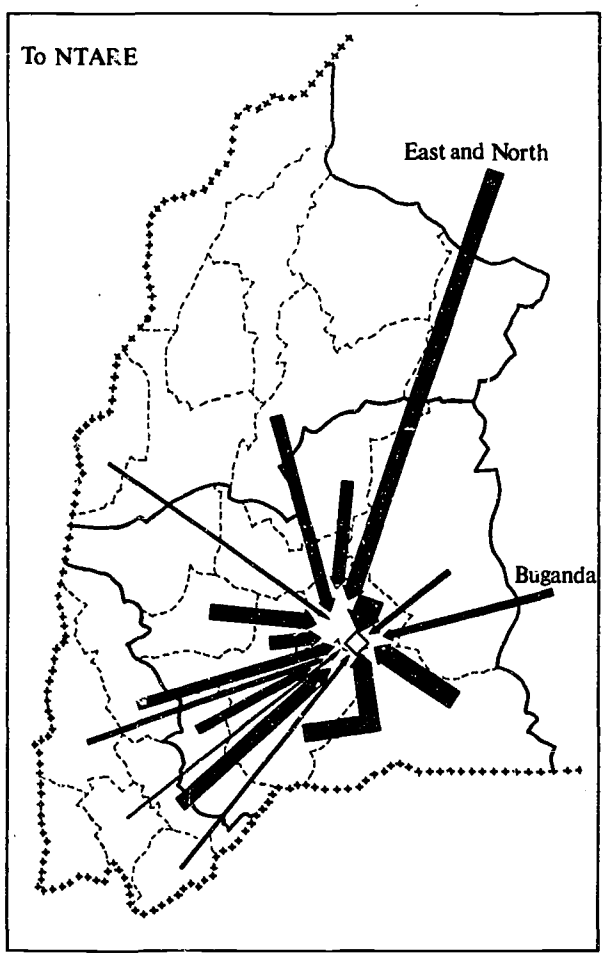
TABLE 25. Second-level school population in Ankole government schools by region of first-level leaving examination

	% of S.1–4 pupils, 1970				% of S.1 pupils, 1971			
	West	Buganda	East	North	West	Buganda	East	North
Ntare	88.1	2.5	2.9	6.0	87.6	3.5	5.3	3.5
Mbarara H.S.	98.7	0.9	—	0.4	98.0	1.3	0.7	—
Kitunga	97.6	0.8	1.1	0.5	94.9	—	3.4	1.7
Ibanda	96.0	3.5	0.5	—	85.7	3.6	1.8	8.9
Bweranyange	98.0	2.0	—	—	97.3	1.7	—	—
Maryhill	88.6	11.4	—	—	87.0	9.3	2.8	0.9

SOURCE IIEP survey and District Education Office data



MAP 16. *The counties of Toro, Ankole and Kigezi*



MAP 17. *Movement of S.1 pupils to Ntare*

a) Which parent? If one were to be singled out in the question, which one? Father could be irrelevant, especially in a situation where there are many polygamous marriages; but the child might be living with his father, or with his father's relatives, rather than with his mother.
b) Which home? In many cases a family group will have plots of land which may be widely scattered throughout Ankole and even outside the district, since it is an area from which many labour migrants travel and have homes, often temporarily, in Kampala or elsewhere.

These difficulties were anticipated and the question was asked on the name and location of the school where the first-level leaving examination was taken. The answer to this question has been taken as a more reliable guide to the pupil's home area than that given to the place of the parents' home. In most cases the areas are the same, but in the few cases where they are not, there were often doubts about the answer to the latter. However, the pupil would have been living with relatives or friends and clearly had some link with the area of the school.

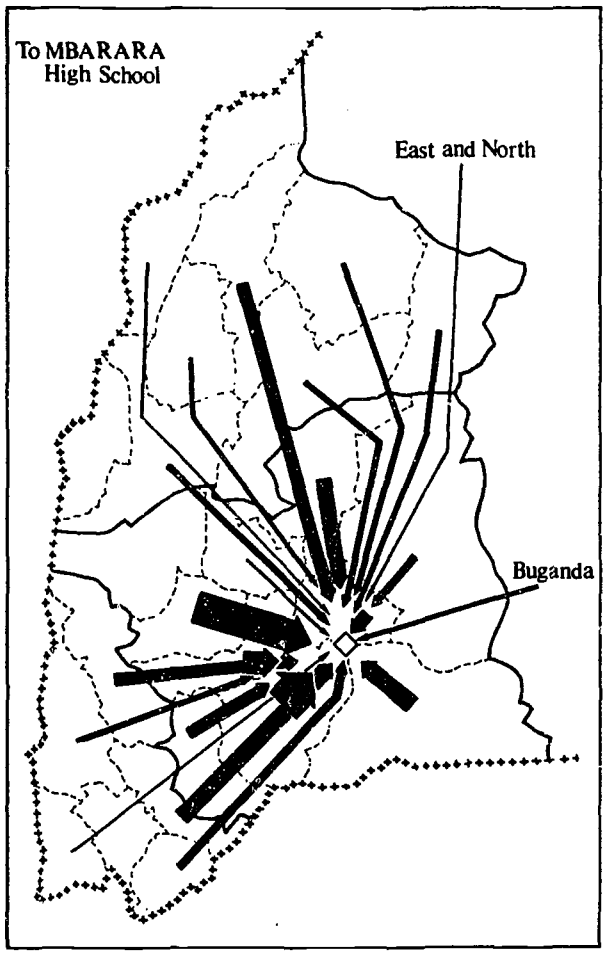
4. Enrolment in government schools

Table 26 reports the principal findings of the questionnaire for the six government schools—a breakdown by sex and religion of numbers from each county of Ankole, Kigezi and Toro (Map 16), for Bunyoro district and each of the four districts of Buganda and the Eastern and Northern Regions. The proportion of pupils who came from P.7 in Ankole was 56.9 per cent, with most of the rest coming from Kigezi (22.1 per cent) and Toro (12.8 per cent). In Maps 17–22 the flow lines indicate the volume of movement to each school from each of the counties of the three south-western districts of Uganda. The pattern is very clearly one of overlapping catchment areas, an interaction pattern, with many pupils attending schools other than their nearest second-level school. Thus there were fifty-seven male pupils from Igara county (in which there are no boys' places in government second-level schools), of whom twenty were in Kitunga, the nearest school, nine were in Ntare, twenty-one in Mbarara High School and seven in Ibanda.

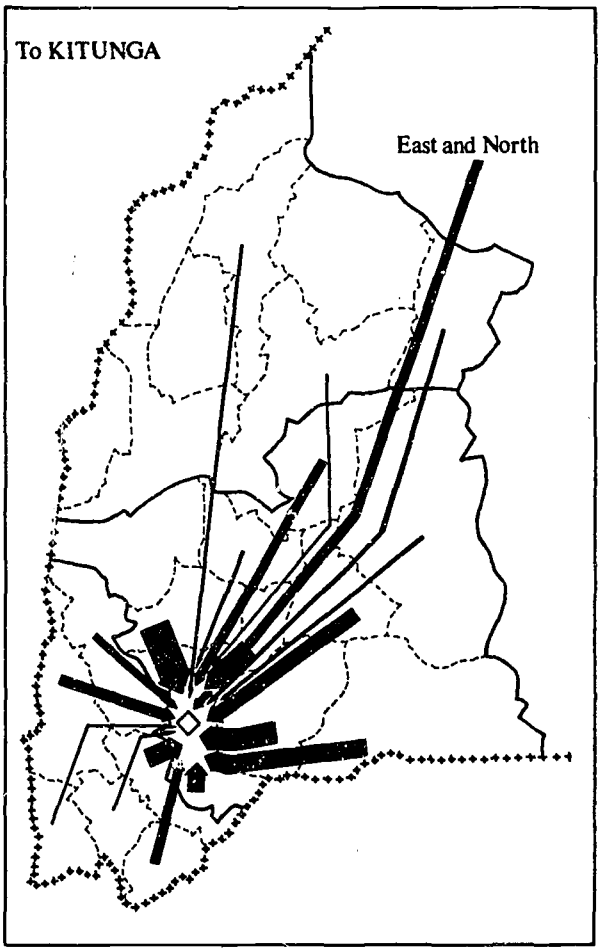
TABLE 26. Government second-level schools: S.1 pupils by school, denomination and area of first-level leaving examination

	Church of Uganda									Catholic									Other[1]									Total								
	A	B	C	D	ST	E	F	ST	T	A	B	C	D	ST	E	F	ST	T	A	B	C	D	ST	E	F	ST	T	A	B	C	D	ST	E	F	ST	T
Buhweju	—	1	1	—	2	—	—	—	2	—	—	—	1	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1	1	1	3	—	—	—	3
Bunyaruguru	—	—	—	—	—	1	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	1
Igara	8	19	19	3	49	10	1	11	60	1	1	1	4	7	3	2	5	12	—	1	—	—	1	—	—	—	1	9	21	20	7	57	13	3	16	73
Isingiro	3	9	6	1	19	1	3	4	23	8	1	3	5	17	1	12	13	30	1	—	1	—	2	1	—	1	3	12	10	10	6	38	3	15	18	56
Kajara	4	6	6	2	18	7	1	8	26	—	1	2	1	4	1	3	4	8	—	—	1	—	1	—	—	—	1	4	7	9	3	23	8	4	12	35
Kashari	6	6	8	1	21	9	—	9	30	2	1	—	—	3	—	—	—	3	7	1	—	—	8	1	9	10	18	15	8	8	1	32	10	9	19	51
Mitoma	6	7	5	12	30	6	7	13	43	1	1	—	14	16	—	8	8	24	—	—	—	—	—	1	—	1	1	7	8	5	26	46	7	15	22	68
Nyabushesi	3	4	2	—	9	3	1	4	13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	4	2	—	9	3	1	4	13
Rwampara	9	26	12	2	49	8	2	10	59	1	1	1	5	8	—	—	—	8	—	—	—	1	1	—	—	—	1	10	27	13	8	58	8	2	10	68
Shema	7	13	4	3	27	5	1	6	33	1	2	6	—	9	—	2	2	11	—	—	1	—	1	—	—	—	1	8	15	11	3	37	5	3	8	45
ANKOLE	46	91	63	24	224	50	16	66	290	14	8	13	30	65	5	27	32	97	8	2	3	1	14	3	9	12	26	68	101	79	55	303	58	52	110	413
Bufumbiro	—	1	1	1	3	3	2	5	8	—	—	—	—	—	—	2	2	2	—	—	—	—	—	—	—	—	—	—	1	1	1	3	3	4	7	10
Kinkizi	3	2	4	2	11	5	—	5	16	—	—	2	—	2	—	3	3	5	—	1	1	—	2	—	—	—	2	3	3	7	2	15	5	3	8	23
Ndorwa	2	3	3	3	11	9	—	9	20	—	1	2	—	3	—	7	7	10					—				—	2	4	5	3	14	9	7	16	30
Rubanda	1	—	1	—	2	2	1	3	5	—	—	—	1	1	2	4	6	7					—				—	1	—	1	1	3	4	5	9	12
Rukiga	7	7	9	2	25	7	5	12	37	1	3	1	2	7	—	5	5	12					—				—	8	10	10	4	32	7	10	17	49
Ruzumbura	7	5	2	—	14	11	3	14	28	—	2	2	2	6	—	3	3	9					—				—	7	7	4	2	20	11	6	17	37
KIGEZI	20	18	20	8	66	37	11	48	114	1	6	7	5	19	2	24	26	45	—	1	1	—	2	—	—	—	2	21	25	28	13	87	39	35	74	161
Bunyangabu	—	—	—	—	—	4	1	5	5	—	1	—	—	1	1	2	3	4	1				1				1	—	2	—	—	2	5	3	8	10
Burahya	—	5	1	2	8	3	1	4	12	—	1	—	3	4	2	3	5	9	1				1				1	—	7	1	5	13	5	4	9	22
Busongora	—	1	—	1	2	—	1	1	3	—	—	—	1	1	—	—	—	1	2				2				2	—	3	—	2	5	—	1	1	6
Bwamba	—	—	—	1	1	—	—	—	1	—	1	—	—	1	—	—	—	1					—				—	—	1	—	1	2	—	—	—	2
Kibale	2	2	—	1	5	1	—	1	6	5	1	1	10	17	—	2	2	19					—				—	7	3	1	11	22	1	2	3	25
Kyaka	—	3	1	—	4	—	—	—	4	—	—	1	1	2	—	—	—	2					—				—	—	3	2	1	6	—	—	—	6
Mwenge	—	3	—	3	6	4	2	6	12	—	—	—	4	4	—	1	1	5					—				—	—	3	—	7	10	4	3	7	17
Bukonjo	1	—	—	—	1	2	1	3	4	1	—	—	—	1	—	—	—	1					—				—	2	—	—	—	2	2	1	3	5
TORO	3	14	2	8	27	14	6	20	49	6	4	2	19	31	3	8	11	42	—	4	—	—	4	—	—	—	4	9	22	4	27	62	17	14	31	93
Bunyoro	1	—	—	—	1	2	2	4	5	—	—	—	1	1	—	—	—	1					—				—	1	—	—	1	2	2	2	4	6
West Buganda	3	—	—	1	4	2	—	2	6	—	—	—	1	1	—	2	2	3	—	1	—	—	1	—	—	—	1	3	1	—	2	6	2	2	4	10
East Buganda	1	—	—	—	1	—	—	—	1	—	—	—	1	1	—	1	1	2					—				—	1	—	—	1	2	—	1	1	3
Masaka	—	—	—	1	1	—	1	1	2	—	1	—	—	1	—	5	5	6					—				—	—	1	—	1	2	—	6	6	8
Mubende	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	1					—				—	—	—	—	—	—	—	1	1	1
Eastern Region	5	1	4	—	10	—	1	1	11	1	—	—	1	2	—	1	1	3	—	—	—	1	1	—	1	1	2	6	1	4	2	13	—	3	3	16
Northern Region	2	—	2	6	—	—	—	—	10	2	—	—	4	6	—	1	1	7					—				—	4	—	2	10	16	—	1	1	17
TOTAL	81	124	91	48	334	105	37	142	486	24	19	22	62	127	10	70	80	207	8	8	4	2	22	3	10	13	35	113	151	117	112	493	118	117	235	728

1. Includes African Moslems, Seventh Day Adventists and all non-Africans and those whose religion was not stated.
For boys: A = Ntare; B = Mbarara H.S.; C = Kitunga; D = Ibanda.
For girls: E = Bweranyange; F = Maryhill.
ST = sub-total; T = total.
SOURCE IIEP questionnaire



MAP 18. *Movement of S.1 pupils to Mbarara High School*



MAP 19. *Movement of S.1 pupils to Kitunga*

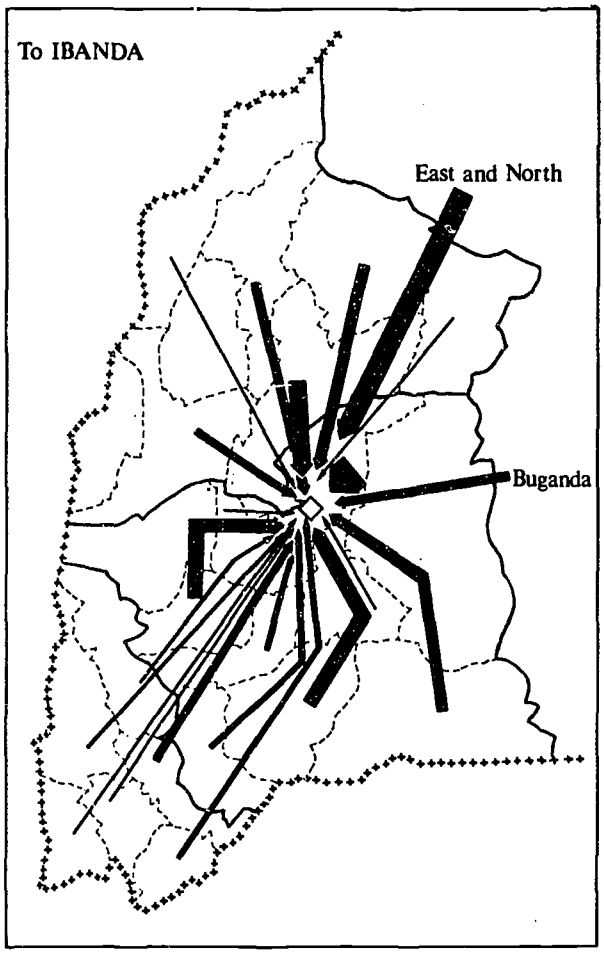
From many points of view it might be thought that it was more appropriate that pupils attend their nearest second-level school and produce an overall pattern of discrete school catchment areas with no overlap and a distance minimizing and optimizing movement of home to school. Clearly this situation is not found in Ankole, so that the school map appears as a rather chaotic system far removed from any theoretical ideal. If it is the aim to rationalize the present system, to move towards a more efficient school map, it is necessary to attempt to identify and assess some of the principal factors affecting the present patterns of movement.

A. DISTANCE

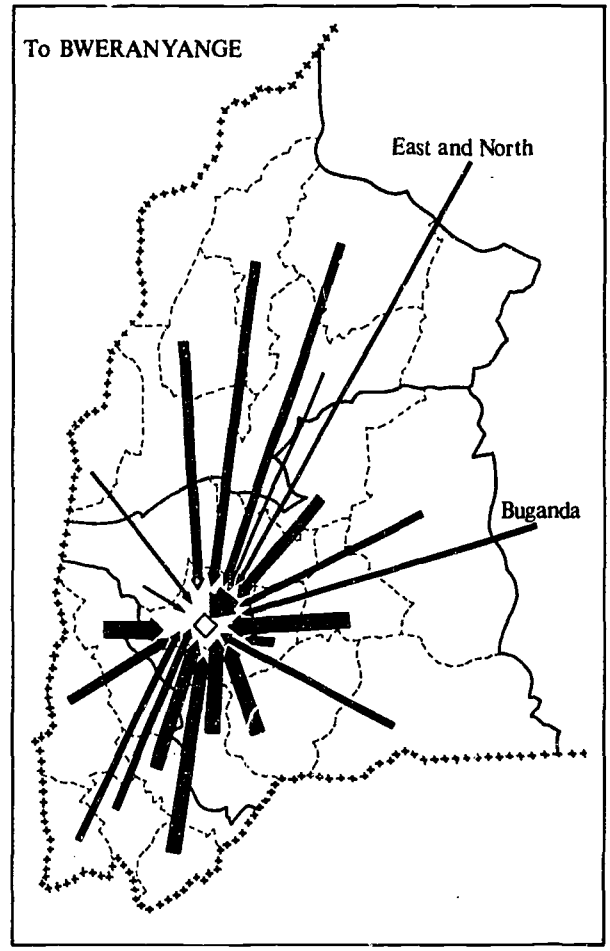
The friction of distance on movement to first-level school has already been discussed and was shown to confirm accepted notions of the number of users declining with distance from the school. In that situation, school-children were walking to school each day, but movement to second-level school in Ankole is over much longer distances and periodic rather than daily—usually at the beginning and end of each of the three terms of the school year—for these six predominantly-boarding schools. Travel to school is by car, bus or lorry, with a large suitcase containing personal needs for the term. To what degree is this different extent and frequency of movement influenced by distance?

The friction of distance is clearly much less, for movement is over much longer distances, the median distance being between 50 and 100 kilometres from the school. Although the distance scale is much greater, the declining number of pupils with increasing distance is apparent from the data. At the national scale (all the second-level schools in Ankole can admit pupils from any part of Uganda) there is the most obvious relationship, with very few pupils from outside the Western Region, while within the Western Region, most come from Ankole and least from Bunyoro. In an attempt to examine the role of distance more precisely, especially within Ankole, and to enable comparisons between schools, each home/school distance was grouped according to nine categories:

1. Within walking distance of the school, i.e. up to 5 kilometres approximately;
2. 5–25 kilometres;
3. 25–50 kilometres;
4. 50–100 kilometres;



MAP 20. *Movement of S.1 pupils to Ibanda*



MAP 21. *Movement of S.1 pupils to Bweranyange*

5. 100–150 kilometres;
6. 150–200 kilometres;
7. 200–250 kilometres;
8. 250–300 kilometres;
9. over 300 kilometres.

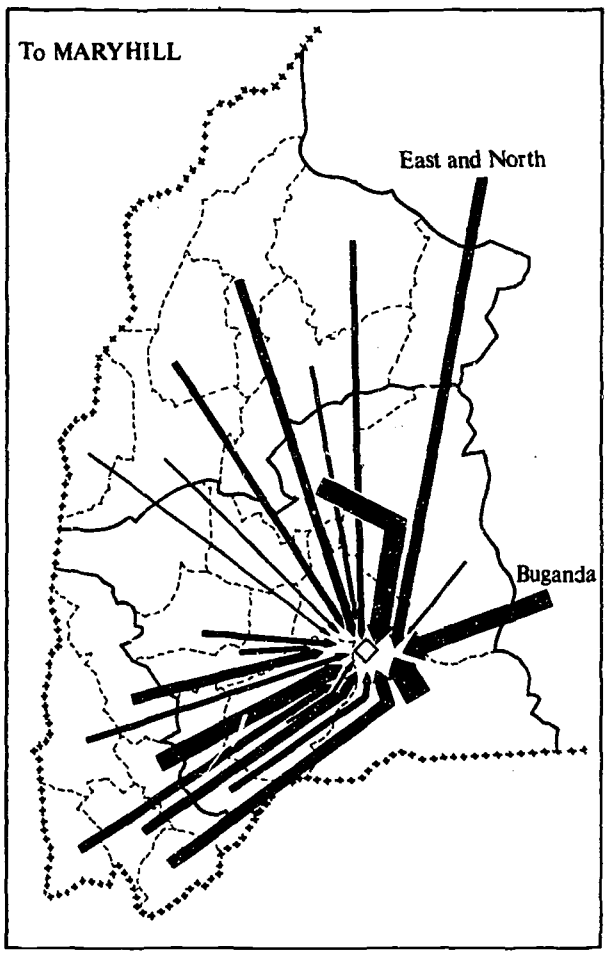
Distance categories for these individual schools are given in Appendix II.

An indication of the shape of the distance decay graph for each school is obtained by considering the percentage and cumulative percentage of pupils at the various distances from each school (Tables 27 and 28). Their chief defect is that they do not take the total population in each of the distance groups into account, so that they are partly a reflection of the distribution of population as well as the

TABLE 27. Percentage of S.1 pupils at various distances

Distance group	Ntare	Mbarara H.S.	Kitunga	Ibanda	Bweranyange	Maryhill
1[1]	13.3	4.6	6.0	6.3	4.2	13.7
2	8.0	9.3	18.8	17.0	11.0	3.4
3	19.5	23.2	42.7	10.7	33.1	6.0
4	31.7	41.7	22.2	39.3	38.1	35.9
5	14.2	19.9	2.6	12.5	10.2	31.6
6	—	—	2.6	1.8	—	0.9
7	2.7	0.7	—	0.9	0.9	2.6
8	1.8	—	—	—	2.5	1.7
9	8.6	0.7	5.1	11.6	—	4.3
	100.0	100.0	100.0	100.0	100.0	100.0

1. See text for explanation of groupings.



MAP 22. *Movement of S.1 pupils to Maryhill*

percentage of pupils at that distance. Ntare and Maryhill, for example, have apparently very high percentages from the nearby area, but since both of these schools are situated near Mbarara town, this is hardly surprising, especially when both schools admit a few day pupils from the town. Mbarara High School, also near the town, does not have day pupils and its equivalent percentage is much lower. For all schools, except Kitunga, the largest percentages are in group 4, where the grouping radius doubles from a 25-kilometre-wide belt to a 50-kilometre-wide belt and the total population therefore increases.

This difficulty is overcome by relating the percentages to a factor of the total population in the distance groups. The total population and its age and sex structure by five-year age groups for 1969 is known[1] and has been used to calculate the proportion of the total pupils in each group (groups 1 and 2 being combined) per 1,000 people aged 15–19, the most appropriate five-year age group, at that distance (Table 29). In absolute terms the resulting indices are of no value, but they provide a good indication of the shape of the distance decay function for each school and enable a comparison of the six graphs of the index plotted against distance (Figure 4). The range of values necessitates using a logarithmic scale and values less than .01 are omitted. There is a sharply falling curve, particularly after group 4, i.e. beyond the Western Region. For three of the six schools the value at group 6 is less than .01. Even within Ankole, Kigezi and Toro there are falls, especially for the four boys' schools. The steepest decline is that of Ibanda with the highest value of the four for groups 1 and 2, and the lowest for group 4; the least rapid fall is Mbarara

1. See *Report of the 1969 population census*, op. cit.

TABLE 28. Cumulative percentage of S.1 pupils at various distances

Distance group	Ntare	Mbarara H.S.	Kitunga	Ibanda	Bweranyange	Maryhill
1	13.3	4.6	6.0	6.3	4.2	13.7
2	21.3	13.9	24.8	23.3	15.2	17.1
3	40.8	37.1	67.5	34.0	48.3	23.1
4	72.7	78.8	89.7	73.3	86.4	59.0
5	86.9	98.7	92.3	85.5	96.6	90.6
6	86.9	89.7	94.9	87.6	96.6	91.5
7	89.6	99.4	94.9	88.5	97.5	94.1
8	91.4	99.4	94.9	88.5	100.0	95.8
9	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 29. Proportion of S.1 pupils per 1,000 of 15–19 age group, 1969

Distance group	Ntare	Mbarara H.S.	Kitunga	Ibanda	Bweranyange	Maryhill
1 } 2 }	1.704	1.112	1.417	3.863	0.720	1.368
3	0.747	0.889	0.683	0.622	0.759	0.230
4	0.543	0.709	0.429	0.373	0.420	0.611
5	0.102	0.142	0.071	0.107	0.125	0.226
6	—	—	0.035	0.034	—	0.021
7	0.034	0.009	—	0.011	0.019	0.033
8	0.022	—	—	—	—	0.021
9	0.023	0.002	0.011	0.029	0.005	0.011

SOURCE Tables 27, 28 and 29 from IIEP questionnaire

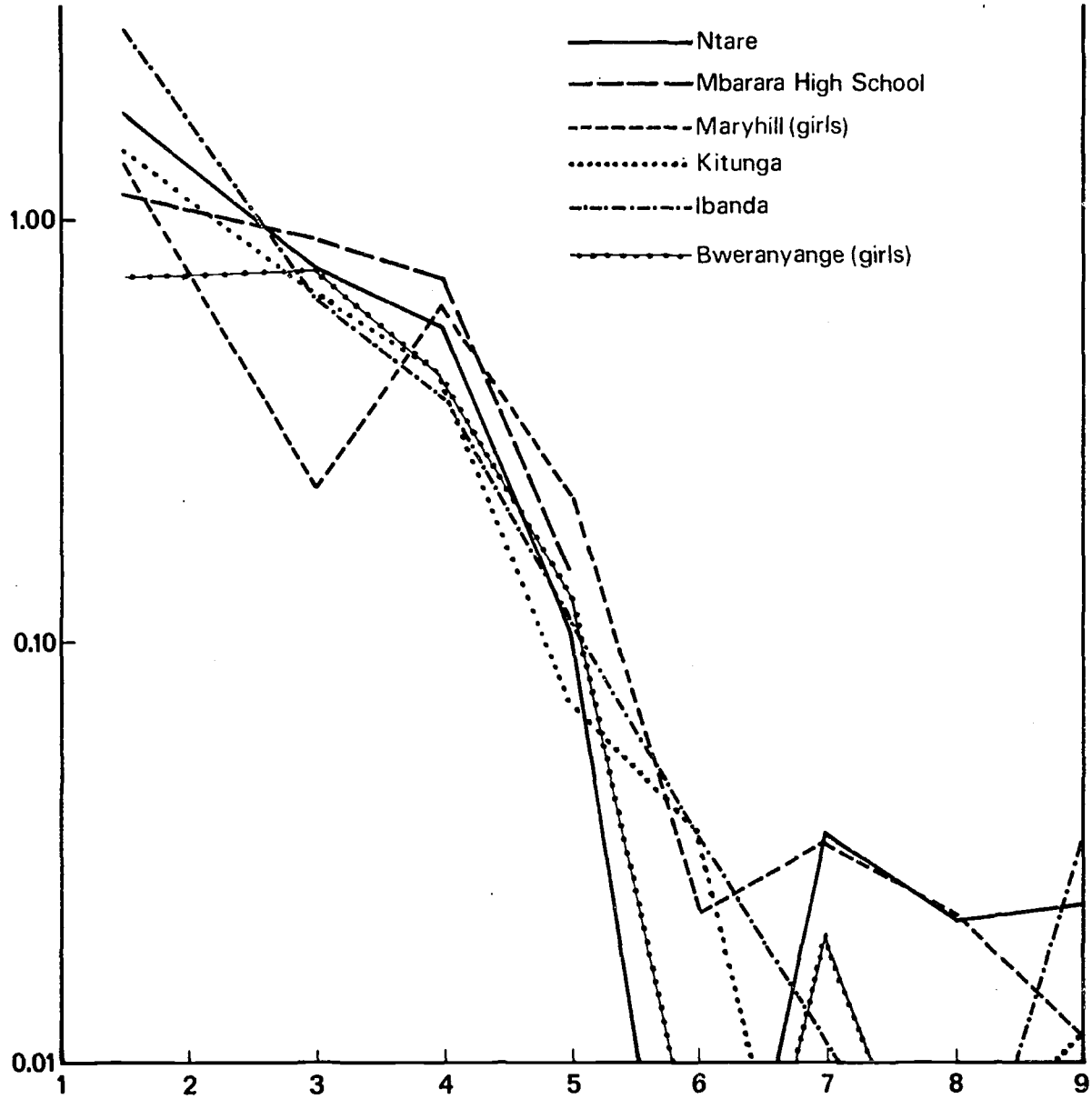


FIGURE 4. *Government second-level schools: percentage of S.1 pupils as a proportion of the 15–19 age group at various distances*

NOTE See page 63 and also Appendix II for an explanation of the distance groupings.

High School, lowest for groups 1 and 2 and highest for group 4. The fall is most irregular for the girls' schools, with Bweranyange rising in group 3 from groups 1 and 2, while group 4 for Maryhill is greater than group 3.

These graphs confirm the view that differences in the scale of movement to first and second-level schools are of degree rather than kind. Despite the greater range of choice of second-level schools, distance continues to operate as the dominant factor affecting the extent of movement from home to school. There are very few pupils in these schools from outside the Western Region, and even within the three south-western districts there are more pupils from near the school than from further afield. However, the role of distance within Ankole appears to be less important, for the distance decay curve falls less sharply, if at all, for shorter than for longer distances. Within the district factors other than distance are important.

B. SEX

There are no mixed government second-level schools in Ankole. The segregation that is rooted in the Victorian educational ideas of the founding missions fitted well into Ankole, where women and girls were and are very much second-class members of society. Enrolment ratios for girls have always been much lower than those for boys, especially at the second level.

There are two girls' second-level schools: Bweranyange, a Church of Uganda school near Bushenyi; and Maryhill, a Catholic school near Mbarara. If these were the only two schools in the district and there was a school zoning policy, these locations would be satisfactory, with Maryhill serving Mbarara and the east and south-west of the district, and Bweranyange the densely populated west. However, such arrangements are not made and there is a very considerable overlap of the catchment areas of the two schools. Intake is nationwide in theory, but 49 per cent of the sample of Bweranyange pupils and 45 per cent of Maryhill's took their first-level leaving examination in Ankole.

With only two second-level schools for girls and four for boys it might be expected that the median home/school distance of girls would be greater. The cumulative percentage/distance table (Table 28) and the overall shape of the distance decay curves invalidate this hypothesis, for there seems to be no particularly clear distinction between the boys' and the girls' schools. There are, however, the irregularities noted above in the curves for the girls' schools at the shorter distances which would seem to indicate that, within Ankole, Kigezi and Toro, distance from the school is even less important than it is for boys' schools.

C. RACE

Even before the expulsion of non-citizen Asians from Uganda during 1972, there were very few non-Africans in school in Ankole. Since the Asian population had been the dominant entrepreneur class, it was highly urbanized and had become increasingly so as rural trading reverted to Africans. The few Asian pupils in second-level schools lived in Mbarara and attended Ntare or Maryhill as day pupils. Home/school distances were very short.

D. RELIGION

The all-important factor of religious affiliation in the evolution of the first-level school map has been discussed and its influence continues into the discussion of the second-level school map. Three of the government schools have Church of Uganda foundations (Mbarara High School, Kitunga and Bweranyange) and two have Catholic origins (Ibanda and Maryhill). Ntare is the only school in Ankole founded entirely on the initiative of the government.

The foundation body of the school is reflected in the stated religious affiliation of the S.1 pupils in the sample (Table 30). There is, however, some inter-denominational mixing and much more so than in the first-level schools. Both Catholic schools have greater proportions of Church of Uganda pupils than the Church of Uganda schools have of Catholics. Is this related to Protestants being less tied to denominational education; or simply that there are more Protestants than Catholics; or that a higher proportion of Protestants pass the first-level leaving examination? The 1959 census, the most recent data on religious affiliation, recorded 23 per cent of Ankole's population professing to be Catholics and 20 per cent Protestants. These proportions are widely different from the percentage enrolments in the schools and also in the government-founded Ntare school. In theory Ntare is free of religious bias, but the school is seen as being a government (therefore establishment) school and the establishment in Ankole is considered to be Protestant. In the first few years of Ntare's history, Catholics were forbidden by their bishop from attending the school.

TABLE 30. Religious affiliation by school

School	Foundation body	% C.O.U.	% Catholic
Ntare	Government	71.6	21.2
Mbarara H.S.	C.O.U.	82.1	12.6
Kitunga	C.O.U.	77.7	18.8
Ibanda	R.C.	42.9	55.4
Bweranyange	C.O.U.	89.0	8.5
Maryhill	R.C.	31.6	59.8

The process of religion affecting the second-level school map begins in the first-level school when pupils apply for admission to second-level school and list their preference of six schools in order. The religious element in the first-level school structure would be expected to produce highly structured flows from Church of Uganda first-level schools to Church of Uganda second-level schools and similarly for Catholic schools. To test this view the second-level school application forms in two neighbouring first-level schools were examined. The schools are Nombe (Church of Uganda) and Rubindi Girls (Catholic), considered in the detailed study of the first-level school map of Rubindi *gomborora*, Kashari County (see page 31). The main difficulty is that there is no question on the pupil's religious affiliation on the form, but it may be assumed that the vast majority of pupils at Nombe are Protestants and at Rubindi, Catholics.

The choices of boys and girls in each school have been differentiated according to the district and foundation body of the schools chosen (Table 31). There are large and important differences in the patterns of choice. First choice schools for Nombe pupils were Church of Uganda schools in the Western Region, with the apparent anomaly of a large number of Catholic schools in Buganda (mostly Kisubi) having a high preference. Ibanda, the only Catholic boys' school in Ankole, did not rate highly in any of the Nombe preferences, although it is the nearest second-level school. It did not rate highly for the Rubindi choices either, Catholic schools in Buganda being most commonly chosen as first choice. The government schools in Buganda are day schools and since it is known that the minimum acceptance marks are low and entry is relatively easy, these schools have higher ratings on third to sixth choice for both Nombe and Rubindi. This indicates a realistic appraisal of entry possibilities rather than a real preference for day schools and there are, in fact, many pupils from Ankole in Kampala and Masaka day schools.

The religious basis of the choice of second-level school is even clearer for girls. Whereas the Nombe pupils had a 7–0 preference for Bweranyange to Maryhill, Rubindi had a 1–4 preference. In Nombe, Maryhill was the most common third choice (Kyebambe Girls', a Protestant school in Toro, was the most common second choice); in Rubindi, Bweranyange was the most common second choice.

TABLE 31. Nombe and Rubindi: choice of second-level school for S.1, 1972

District	Foundation body	Nombe						Rubindi					
		1st	2nd	3rd	4th	5th	6th	1st	2nd	3rd	4th	5th	6th
Boys													
Ankole	C.O.U.	6	9	11	6	1	1	—	—	1	4	—	—
	R.C.	—	1	2	—	—	2	—	—	1	—	—	—
	Government	1	1	—	2	1	—	—	—	—	—	1	2
Kigezi Toro Bunyoro	C.O.U.	9	8	9	6	3	—	—	—	—	1	2	1
	R.C.	2	—	—	4	—	—	—	1	1	—	—	—
	Government	—	1	1	1	1	1	—	—	—	—	—	—
Buganda	C.O.U.	1	4	2	3	—	2	3	—	4	1	—	2
	R.C.	8	4	—	1	6	2	9	8	4	2	3	2
	Government	2	—	4	7	14	17	1	3	1	6	6	5
Other	C.O.U.	—	—	—	—	—	—	—	1	1	—	—	1
	R.C.	—	—	—	—	—	—	—	—	—	—	1	—
	Government	1	2	1	—	4	5	1	1	1	1	1	1
TOTAL		30	30	30	30	30	30	14	14	14	14	14	14
Girls													
Ankole	C.O.U.	7	1	—	—	—	—	1	5	2	1	—	—
	R.C.	—	1	5	1	1	—	4	4	—	1	—	—
Kigezi Toro Bunyoro	C.O.U.	3	8	1	2	2	—	2	1	1	2	—	2
Buganda	C.O.U.	—	—	1	1	—	—	1	—	—	—	—	1
	R.C.	2	3	1	4	—	—	2	—	7	5	2	2
	Government	1	—	5	5	9	12	—	—	—	1	7	5
Other		—	—	—	—	1	1	—	—	—	—	1	—
TOTAL		13	13	13	13	13	13	10	10	10	10	10	10

Religion tempers the effects of distance by directing flows to particular schools according to their foundation body, rather than to the nearest school. Distance is also important, but the relationship between the two factors is clearly complex. Why is Kisubi, the oldest Catholic school in Buganda, so popular with Nombe pupils? Why is Ibanda, the nearest second-level school, so unpopular, even with pupils from Catholic Rubindi? The teacher may in fact exert considerable influence, especially if the pupil's parents have not been to school. The pupil's choice will be affected by the teacher's experience and knowledge of denominational schools and teacher-training colleges.

This relationship between distance and religion is taken further in an analysis of the religious affiliation of the pupils in the sample by distance grouping as differentiated above (Table 32). One would expect that a child would be prepared to travel further to a school of his own religious group than to a school of another group; crossing the denominational barrier would be more likely in order to attend a nearby school. This perceived quality of the school, i.e. the religious basis of the education it is thought to provide, would be noted in cumulative frequency curves for each group. In a Church of Uganda school the proportion of Catholic pupils would be expected to be greater than the Church of Uganda proportion for a near distance, but less for further distances. This is the case in Kitunga and Bweranyange, where the Catholic cumulative percentage is greater than the Church of Uganda cumulative percentage throughout. It is not the case for Mbarara High School, where the Church of Uganda percentage is greater than the Catholic percentage in groups 1 to 4. However, there are no Catholics coming from beyond the fourth group but a few Protestants come longer distances. The expected pattern is apparent for Ibanda, where a higher proportion of Church of Uganda than of Catholic pupils are found in groups 1 to 4. The few pupils from the Eastern and Northern Regions, giving Ibanda's distance decay graph its long tail, are mostly Protestants. The expected pattern is not evident for Maryhill, where the cumulative percentages are very similar for eight of the nine groups.

Although religion is important in the structuring of the home/school flows of second-level pupils, its influence is rather less than might be expected and certainly less than it is in the structuring of flows of first-level pupils. This is due partly to a much greater range of choice of school, a choice that is often made on the basis of relatively little information, and, since religious rivalry is at its keenest at the local level, crossing the denominational barrier at a higher level may be considered less important. The mixing is further helped by the fact that not all pupils are able to go to the school of their first choice.

E. SCHOOL QUALITY

School quality was considered above in the sense of the type of education offered, but the phrase is more commonly applied to its academic quality in terms of performance and examination results. The quality of facilities

TABLE 32. S.1 enrolment by distance and religious affiliation

Distance group	C.O.U	R.C.
Mbarara H.S. (C.O.U.)		
1	4.0	5.3
2	15.3	5.3
3	41.9	15.8
4	82.0	72.7
5	98.1	100.0
6	98.1	100.0
7	98.1	100.0
8	98.1	100.0
9	100.0	100.0
Kitunga (C.O.U.)		
1	5.5	4.6
2	22.0	36.4
3	67.1	68.2
4	89.1	90.9
5	91.3	95.3
6	93.5	100.0
7	93.5	100.0
8	93.5	100.0
9	100.0	100.0
Ibanda (R.C.)		
1	25.0	11.3
2	29.2	22.6
3	64.6	38.7
4	85.4	80.6
5	85.4	87.1
6	85.4	90.4
7	87.5	90.4
8	87.5	90.4
9	100.0	100.0
Ntare (Government)		
1	6.2	12.5
2	14.8	16.7
3	33.3	44.9
4	74.0	57.4
5	85.1	86.6
6	85.1	86.6
7	88.8	86.6
8	91.3	86.6
9	100.0	100.0
Bweranyange (C.O.U. girls)		
1	4.8	30.0
2	14.3	40.0
3	48.6	80.0
4	86.1	100.0
5	95.6	100.0
6	95.6	100.0
7	96.6	100.0
8	100.0	100.0
9	100.0	100.0
Maryhill (R.C. girls)		
1	5.4	8.6
2	10.8	11.5
3	16.2	18.6
4	64.9	52.9
5	91.9	91.5
6	91.9	92.9
7	94.6	95.8
8	97.3	97.2
9	100.0	100.0

SOURCE IIEP questionnaire

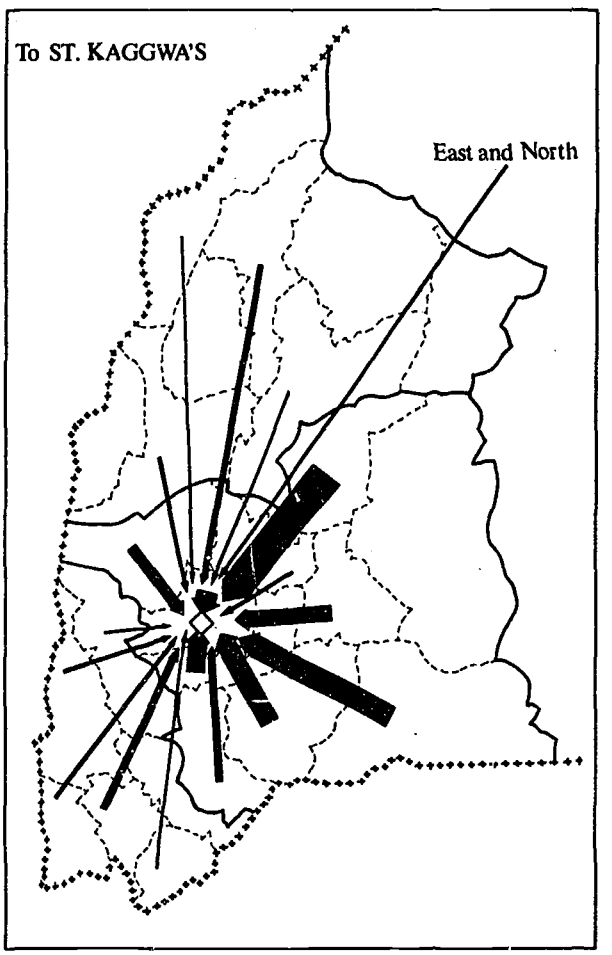
varies considerably in the six schools, but this range is less than the range of intellectual ability of the intake into the schools. Ntare school has the best academic reputation of all six schools, with examination results over several years that are among the best in Uganda. Entrance requirements are very high and only the very best find a place. This is seen in Table 33. Only two pupils in S.1 did not have Ntare as their first choice. These two are, in fact, both Asians whose first choice was a day school in Kampala even though their homes are in Mbarara.

TABLE 33. First and second choice of school for S.1 enrolments

	No. of 1st choice	No. of 2nd choice	Other choice	Total
Ntare	111	1	1	113
Mbarara H.S.	135	15	1	151
Kitunga	63	31	23	117
Ibanda	61	—[1]	51	112
Bweranyange	107	10	1	118
Maryhill	100	11	6	117

1. Not asked in this school.

MAP 23. *Movement of S.1 pupils to St. Kaggwa's*



The other schools have many more who named their present school as either their second or other choice. This, coupled with the data from Nombe and Rubindi (Table 31) indicates how realistic the pattern of choices is. Very few had Ntare as first choice, and presumably these were the best pupils who stood a chance of gaining a place. Kampala day schools, with low entry grades, are able to take third or fourth choices after other schools have rejected the candidate. The pupils of the second-level schools of Ankole, other than Ntare, who did not have their present school as their first choice probably had a 'better' school as first choice—Ntare or Budo or Kisubi for boys, Gayaza or Nabbingo for girls.

5. Enrolment in private schools

The questionnaire was administered in St. Kaggwa's private school, and the findings are assumed to be representative of conditions in all three private schools under consideration. Data collection was done under the same conditions and to a similar stratified sample as in the government schools. Table 34 is a summary of the findings, and the pattern of origins is described in Map 23.

It was expected that the maximum and median catchment area would be smaller for St. Kaggwa's than for any of the government schools, even for boarding pupils only, for knowledge of the school's existence would be more restricted to Ankole and nearby districts. This is confirmed, for seventy-two of the eighty-four boarders (86.8 per cent) took their first-level leaving examination in Ankole. This is to be compared with 67 per cent for Mbarara High School—the government school with the highest percentage from Ankole—the average for the six government schools being 56.9 per cent. Within Ankole, distance from the school seems blurred as a factor but there are two particular aspects that deserve mention:

a) The large numbers coming from the relatively distant Mitoma county. The headmaster was in Mitoma as a parish priest immediately before he came to found the school and his links with the county are strong enough to attract pupils.
b) The numbers from Bunyaruguru are greater than the total pupils from this county enumerated in the six government schools.

The stated religious affiliation is not unexpected for a Catholic school, but 21.3 per cent of the pupils are Protestants. The pattern of denominational mixing is similar to that in the government schools and would appear to allay the often-held fears that schools controlled by churches exercise a discriminatory admissions policy. This allegation may have an element of truth in a few schools, particularly first-level schools, and may be more widely practised in some second-level schools than in others, but the proportions of Catholics and Protestants found in this private school would not have been unexpected in a

TABLE 34. St. Kaggwa pupils by religion, sex and geographical origin

	Male								Female			
	C.O.U.		R.C.		OTHERS		TOTAL		C.O.U.	R.C.		
	Boarders	Day	Boarders	Day	Boarders	Day	Boarders	Day	All day pupils		Total	Grand Total
Buhweju	—	—	1	1	—	—	1	1	—	—	—	2
Bunyaruguru	—	—	6	—	—	—	6	—	—	1	1	7
Igara	2	1	2	4	—	2	4	7	1	1	2	13
Isingiro	3	—	6	1	—	—	9	1	—	4	4	14
Kajara	—	—	3	—	—	—	3	—	—	1	1	4
Kashari	3	—	6	—	—	—	9	—	1	—	1	10
Mitoma	1	—	18	1	1	—	20	1	—	—	—	21
Nyabushosi	—	—	—	—	—	—	—	—	—	—	—	—
Rwampara	7	—	5	—	—	—	12	—	—	—	—	12
Shema	1	1	7	2	—	—	8	3	—	—	—	11
ANKOLE	17	2	54	9	1	2	72	13	2	7	9	94
Bufumbiro	—	—	1	1	—	—	1	1				2
Kinkizi	—	—	2	—	—	—	2	—				2
Ndorwa	—	1	—	—	—	—	—	1				1
Ruzumbura	—	—	1	—	—	—	1	—				1
KIGEZI	—	1	4	1	—	—	4	2				6
Burahya	—	—	3	—			3	—				3
Busongora	—	—	2	—			2	—				2
Bwamba	—	—	1	—			1					1
Kibale	1	—	—	—			1	—				1
TORO	1	—	6	—	—	—	7	—				7
ACHOLI	—	—	1	—	—	—	1	—				1
TOTAL	18	3	65	10	1	2	84	15	2	7	9	108

SOURCE IIEP questionnaire

government school, given the present admissions system.

The situation of the day pupils is most interesting. All nine girls are day pupils and fifteen of the ninety-nine boys, but this does not signify that they have homes within daily commuting distance of the school. Only three of the girls and five of the boys live or were at first-level school within five km of St. Kaggwa's. Two of these five boys travel to school by bicycle, all the others walk. Of the fifteen day pupils whose homes are away from St. Kaggwa's, fourteen live rent-free with friends or relatives near the school; the other lives in a rented room.

This is a very important finding for it indicates that the effective demand for day-school education is not confined to the immediate vicinity of the school. Pupils are willing to leave home if they can find a place in a school. In a society such as is found in Ankole, where clan and kinship relationships are very strong, there will often be a relative with whom to lodge within daily travel distance of the school and the living accommodation is as good as at home, both from the social point of view and for the provision of food, etc. Even if boarding accommodation is not provided, pupils will be able to move near the school and find accommodation without great financial difficulty, especially if the home/school distance is not very great, so that there is a greater likelihood of relatives living in the immediate neighbourhood of the school.

VIII. Development of the second-level school network

1. Development objectives

Although the planning of second-level school expansion in Uganda has been firmly linked to projections of manpower planners, actual expansions have often greatly exceeded planned expansions. While the long-term projections of the needs of the economy indicated an enrolment of 7,000 in S.1 in 1971, actual intake was 10,850. 'In the face of this surplus [of expensively educated pupils], government had decided that S.1 intakes should be very strictly controlled during Plan III (1971/72–1975/76). The only growth in intakes which will be permitted will be to improve the present geographical distribution of second-level schools. Where possible, this improvement will be achieved by taking over private institutions rather than by building completely new schools. S.1 intakes will grow from their 1971 level of 10,850 to 11,300 by 1976.'[1]

The short-term possibilities for expansion seem limited, but since in the plan period it is expected that first-level enrolments will expand considerably, there will need to be considerable expansion of second-level enrolments after 1976 to meet the ever-increasing demand from the population for more places, irrespective of the manpower requirements. Attempts to limit expansion will be politically dangerous and will result in further mushrooming of private second-level schools outside the government's control. In Uganda there are known to be over 300 private second-level schools in 1971, 'many of them very small, under-equipped and badly staffed',[2] but the government does not have the resources to provide much assistance to them.

The main aim of each case study of the School Map Project is to make specific recommendations for the shape of the school map at a given date or dates by planning the location of second-level schools which will allow for expansion and rationalization simultaneously. How can the map of the present system discussed in the preceding chapters reveal present irrationalities and inefficiencies in such a way that the school map of the future will be more rational? This chapter considers the possibilities for the expansion of second-level enrolments in the light of the present school map and the government's development objectives to 1979.

Recommendations relate directly to two of the stated aims of any expansion:

a) They will improve the present distribution of schools. This will be done in two senses:
   (i) by reducing the disparity between provision and population when comparing Ankole with the rest of Uganda;
   (ii) by achieving a more even distribution of schools within the district.
b) They will reduce the cost per pupil-place so that the limited budget of the Ministry of Education can cater for more pupils.

2. Enrolment projections

In calculating the expansions to 1979, the manpower approach is rejected despite the fact that it is the basis for the government's development objectives to 1976. Even if the expansions were limited to 1976, there would be great pressure for expansion between 1976 and 1979 and, in the years up to 1976, Ankole can be expected to have increased its enrolments in order to 'improve the geographical distribution of schools', for with 8.8 per cent of the national population, there is only 7.3 per cent of S.1 enrolment. A realistic assumption may be made—that the first-level/second-level promotion rate of 1971 will be reached again in 1979, although it will have fallen until 1976.

The demographic approach adopted in consideration of first-level school enrolment projections (see Chapter IV) cannot be adopted in the case of second-level schools because the demand by the population for second-level school places is more a function of enrolments in first-level schools than of the total number in the relevant age group. One must look at enrolments in all grades of the first-level schools and not at population growth as a guide to the rate of expansion of second-level enrolments. The problem of estimating future demand is further complicated by the fact that the second-level system in Ankole is

1. See Republic of Uganda, *Third five-year development plan, 1971/72–1975/76*, Entebbe, Government Printer, 1972 (p. 335)
2. Ibid. (p. 336)

not a closed system. There are pupils from Ankole enrolled elsewhere and pupils from elsewhere in Ankole schools. The expansion need not, therefore, relate directly even to the size of the first-level system in the district. In the following attempt to estimate the demand for second-level places, it is assumed that the drop-out and repeater rates in first-level schools and the first-level/second-level promotion rates remain constant.

A projection based on these rates in first-level schools will enable a calculation of the potential demand for second-level enrolment, but must also consider projected changes in participation rates in the planning period to provide a more reliable estimate of the actual demand. Given the rapid population growth and continuing financial stringency in Ankole, it was estimated that the best that can be hoped for is that the rate of expansion of first-level enrolments will match the rate of increase of the school-age population so that participation rates do not fall. This will necessitate an increase in P.7 enrolments of between 40 and 60 per cent, depending on the actual rates of population increase, between 1971 and 1979.

An alternative method of projecting demand is to consider the movement of a cohort of pupils through the system. Pupils who began first-level school in 1964 were, if they had not repeated, in P.7 in 1970 and S.1 in 1971. Table 35 indicates that enrolment in S.1 in government schools in 1971 was 10.3 per cent of P.1 enrolment in government schools in 1964. Assuming that there was no change in the proportions of P.1 pupils in government and private schools between 1964 and 1971 and applying the same procedure to the estimates of P.1 enrolment in government schools in 1971, the required number of S.1 places in Ankole in 1978 will be 1,230, out of nearly 12,000 who were enrolled in P.1. This represents an increase of nearly 70 per cent over the 1971 S.1 enrolment and is therefore rather larger than the demand estimated in the preceding paragraph.

TABLE 35. Enrolment estimated by cohort

P.1 enrolment		P.7 candidates		S.1 Places	
1964	7 042	1970	6 137	1971	728
1971	11 928	1977	c. 11 000	1978	c. 1 230

SOURCE HEP projections

Although the gap between provision and population is not large, some attempt must be made to close it. This is particularly necessary when one takes note of the large numbers of pupils from Ankole in Kampala day schools; there were 129 in S.1 in 1971 and an estimated S.1–4 total of 500. It would be better if these pupils could find a place in second-level schools nearer their homes, so relatively more places ought to be provided in Ankole. Enrolment projections can be adjusted to achieve this.

By 1979 it is estimated that about 1,450 S.1 places will be needed if promotion rates are not to fall. This is double the 1971 capacity of 728 pupils. To achieve these projected enrolments it is, therefore, necessary to double S.1 capacity in Ankole second-level schools between 1971 and 1979. There is at present a standard class size of forty pupils throughout the government second-level system. In 1971 the 728 S.1 pupils in Ankole were in nineteen classes in government schools (four in Mbarara High School and three in each of the other five schools). Nineteen new classes are therefore required before 1979. The crucial question for the School Map Project is to decide where these should be provided.

The expansion planned for in this discussion appears optimistic in the light of current government policy and financial difficulty. It is possible that promotion rates will fall and that expansion will be less than the projected target. Unless some schools get smaller or close down altogether, the possibilities for planning a more rational school map are less if total expansion is reduced. If there were to be little or no expansion in Ankole up to 1979 the school map would probably remain unchanged, for it is inconceivable that some schools would close or lose some of their enrolment at the expense of new schools.

There are two sets of problems to be considered before specific recommendations can be made: the general organizational problems and rationalization alternatives for second-level education in Uganda; and the spatial problems specific to the situation in Ankole.

3. Rationalization alternatives

These are concerned with changes in the school network system which might be envisaged as necessary or desirable before 1979 and would therefore need to be incorporated within the present discussion. Although it is not the aim of the School Map Project to assess the efficiency of the structure of the education system and how this can be improved, there are certain questions that must be considered before planning the school map.

A. SHOULD DEVELOPMENTS INVOLVE THE EXPANSION OF EXISTING SCHOOLS OR THE CREATION OF NEW ONES?

The main expansion in second-level education in Uganda took place in 1965/66 with the creation of twenty-five new second-level schools, but since then expansion policy has favoured increasing enrolments in existing schools. This has been done by raising the class size from thirty-five to forty and the number of streams in most schools from two to three. Thus the typical school in 1971 had three streams of forty in S.1–4 (480 pupils) compared with two streams of thirty-five (280 pupils) in 1966. Some schools, for example Mbarara High School, are larger than this minimum and there are five urban day schools in Uganda which operate a two-shift system, the largest being Jinja Secondary School with fifteen streams and a total enrolment of over 2,000 pupils.

There have been no studies in Uganda specifically aimed at ascertaining the optimum size of second-level schools, but Chesswas and Hallak in a study of costs in second-level schools concluded that 'everything being equal, it is possibly cheaper to expand educational systems by building new schools than by expanding older schools with tradi-

tions to maintain, which costs money . . .'[1] Accepting this conclusion, therefore, one must recommend that new schools be built in Ankole. However, the conclusions reached by Chesswas and Hallak are rather tentative for, in the same report, there is evidence to show 'the larger the school the lower the unit cost'. It would seem reasonable, therefore, to allow existing schools to expand to the size of the Mbarara High School. This means an addition of five streams, one in each school. This would be possible given the site conditions at each, but might necessarily depend on whether this additional stream would be of boarders or day pupils and whether they require facilities other than classrooms.

This expansion would cater for five of the nineteen streams that are required. The remaining fourteen would be in new schools: either five schools of three streams (one with two streams initially) or four schools of four streams (two with three streams initially).

B. SHOULD SECOND-LEVEL SCHOOL CATCHMENT AREAS BE REGIONALIZED?

The existing system for all the government second-level schools is to have national catchments with pupils from any part of Uganda being able to attend any school. This system is alleged to be of great value in fostering a national rather than a tribal outlook, for pupils learn to understand and work with compatriots with whom they might not otherwise have had any contact. This national idea operates successfully in the case of the old-established boarding schools near Kampala—Budo, Gayaza, Kisubi, Namilyango and Namagunga—which do, in fact, have significant numbers of pupils from all districts. It has been shown not to be the case for the schools of Ankole, where there are very few pupils from outside the Western Region and over half the total from Ankole itself. The alleged value of tribal mixing may, in fact, back-fire in this situation, for although English is the medium of instruction, the individual pupil from Teso or Acholi, the only one speaking his or her own vernacular language, may have a miserable time in a school very much dominated by the local group. The schools of Ankole are regional rather than national, so that any policy of regionalizing intakes would have relatively little impact on present catchment areas of S.1 classes.

There might be some indirect impact however. The Western Region is deficient in school facilities relative to its population and any policy of regionalizing intake without first equating provision and population would be to Ankole's disadvantage. One scheme that has been proposed is similar to that which operates in neighbouring Kenya, where there are a few national schools with fixed regional quotas to ensure a good tribal mix and all other schools have regional intakes. If the national schools were to be the prestige boarding schools in Buganda, which is already over-provided,[2] this would have the effect of improving the situation in Ankole for those pupils with the best performance in the first-level leaving examination would leave the district to go to the national boarding schools. More places in local schools would then be available for the less good pupils. This would seem more satisfactory than the present situation, with most of the pupils going out of Ankole attending day schools where life is much more difficult. However, if Ntare were to become one of those national schools, as would seem likely, Ankole would be worse off than at present for there would be necessarily fewer Ankole pupils at that school.

The regionalization policy, together with increased capacity in Ankole, would reduce the cost of transport at the beginning and end of each term to areas as far away as Karamoja. Such a policy would mean more to Ankole pupils than to Ankole schools. It is likely that there will be some move towards a regional intake policy and that some of the pupils who, under the present arrangements, leave the district will remain in Ankole to go to school.

C. SHOULD ADDITIONAL PLACES BE FOR BOARDERS OR DAY PUPILS?

Most of the second-level schools in Uganda are boarding schools and all six in Ankole are predominantly, if not wholly, boarding. The reasons for this are not hard to find. Not only did the missions prefer their pupils to be removed from their local environment, but also, when so few pupils attended second-level school, the great majority of them did not live within daily travel distance. Boarding schools have been institutions promoting equality of educational opportunity in Uganda, enabling pupils from remote rural areas to find a place in school. As the enrolment ratio for second-level school rises, the need for boarding schools declines, for more and more pupils who gain a place live within daily walking distance of a school.

The most crucial factor in favour of the provision of more day places is the cost factor. In a comparison of the recurrent costs of eleven second-level schools in different parts of the country, the five day or predominantly day schools chosen had the lowest unit cost.[3] The main item in the recurrent boarding cost is food, while this cost is borne by the pupil in a day school. Furthermore, there is the very heavy capital investment in dormitory and catering facilities. In 1964 a Ministry of Education committee on second-level school costs estimated that the overall cost of a boarding place in S.1–4 was £160 per annum, as compared with £73 for a day place. The cost of providing the extra places needed, i.e. doubling existing capacity, will be more than twice as much if boarding school places are provided rather than places for day pupils.

This cost differential has been known for several years and, despite its continual discussion in official and unofficial circles, there has been relatively little development of day-school second-level education in Uganda. For several years the Ministry of Education has said that it will insist that boarding schools accept day pupils. The President of the Republic said in July 1971, while opening new buildings at Maryhill School in Mbarara, that from the following year (1972) boarding schools would be compelled to accept day pupils and that 'parents, whose homes are within walking or cycling distance of second-level schools, should not apply for residential places in boarding

1. See J. D. Chesswas and J. Hallak, 'Uganda: behaviour of non-teacher recurring expenditures' in *Educational cost analysis in action: case studies for planners*, Vol. III, Paris, Unesco: IIEP, 1972.
2. See W. T. S. Gould, *Movements of schoolchildren* . . ., op. cit.
3. See J. D. Chesswas and J. Hallak, op. cit. (Appendix VI)

schools.'[1] This policy was not insisted upon in the 1972 entry.

There has been consistent pressure from within the schools to prevent boarding schools accepting day pupils. Arguments against this move emphasize the difficulties of day pupils fitting into the life of a boarding school, difficulties of finding study time and the availability of library facilities away from the school. Undoubtedly there are difficulties, but in a few schools (e.g. Kisubi), there has been an intake of a whole stream of day pupils, not just a token few among the boarders. The educational difficulties are reduced if the day pupils are treated as a group, for adjustment can then be made. It is proposed, therefore, that the additional stream in the five existing schools will have day pupils only. For those whose homes are in the immediate vicinity of the school this would give a very mixed stream—mixed religion, sex and ability—and as the existence of private day schools has shown, there is no shortage of demand for day-school education.

The value of having male and female pupils attending what are at present single-sex schools will be contested. This will affect only three of the schools—some boys going to Bweranyange and girls to Kitunga and Ibanda—for in Mbarara, Maryhill can take all female pupils and Ntare all males. The general policy of the government is to have mixed-sex schools and resistance to any mixing will come from the schools in question. This difficulty will not arise in the new schools for there is no particular pressure from parents for single-sex schools. A rural day school's feasibility will be greatly enhanced if it has a mixed-sex intake.

The conclusion must be that expansion in the existing schools should be for day pupils and for local children, regardless of sex and ability above the national minimum result in the first-level leaving examination. The new schools should be for day pupils only if there are areas in Ankole where there is sufficient demand within daily travel distance, as is likely to be the case as total enrolment rises. For this reason it is suggested that five schools of three streams, rather than four of four streams, should be opened to allow for the further expansion of these five as enrolments increase beyond the target year.

D. SHOULD THE GOVERNMENT TAKE OVER EXISTING PRIVATE SCHOOLS FOR SOME NEW SCHOOLS?

It was indicated at the beginning of this chapter that official policy is to expand the number of government schools by taking over existing private schools, rather than by establishing new ones. The wisdom and practicability of pursuing such a policy in Ankole needs to be questioned, as a preliminary to considering the location of proposed new schools for rationalization of the school map for 1979. Specifically, should St. Kaggwa's, Kabwohe and Nyakazinga be three of the five new schools? Not Nyakazinga, for it is too near Kitunga and their local catchment areas would overlap; but the other two are in areas of high density, sufficiently far from other schools, where there is the greatest possibility for a day school with local intake and where there is a proven demand for day second-level education. There are also existing buildings and staff, so that the cost and difficulties of taking over these schools will be less than in creating new schools.

Despite these advantages the balance of the evidence must be that it would be unwise to make St. Kaggwa's and Kabwohe two of the new schools. These schools have poor facilities, poor teachers, and pupils who have been unable to command a place in a government school. The schools are widely and rightly considered to be second-rate, far below the level of any government school. The atmosphere in private schools, in general, is one of depression and failure. A new school needs a fresh start and must not be built on these extremely weak foundations. This is especially necessary since the schools are to be day schools and must attract pupils who positively choose that school in preference to established schools in Kampala or even Mbarara. Only if it is perceived to be of high quality can a day school with a local intake hope to be sufficiently successful without creating the resentment among parents and pupils that they are getting an education that is less good than elsewhere.

4. Spatial problems

Having concluded that it would be advisable to expand education by providing day-school places in existing boarding schools and establishing new day schools, detailed consideration must now be given to the practicability of these proposals in the specific spatial context of Ankole. Is it feasible to establish day schools in the district and, if so, where should these be located?

By their very nature day schools have a much more restricted catchment area than boarding schools. The catchment area effectively extends to the limits of daily travel distance to the school. Where there is regular and reliable public transport this can be a considerable distance, but in a poorly-developed community most pupils must walk to school. For second-level pupils in Ankole a walk of up to five km is not unreasonable, although a minority of pupils do walk much further each day. Given an effective range of five km in all directions the catchment area is 78.55 sq.km. Within this area, can there be a sufficiently large number of qualified pupils to maintain a school above an acceptable minimum enrolment?

In rural areas of some developed countries there are small one-stream second-level schools, but where there are severe financial and personnel constraints, as in Uganda, the minimum acceptable size must be large by the standards of developed countries for, as has been shown, unit cost declines as enrolment rises. The smallest second-level school in Uganda in 1971 was a two-stream school with a notional enrolment in S.1–4 of 320. There is only one such school and most of the others are three-stream schools with a notional enrolment of 480. Thus, while a school of 320 is in fact the minimum enrolment, evidence indicates that a three-stream school is a more acceptable minimum.

There need to be 480 pupils within the effective catchment area of a day school. Whether or not this is the case

1. *Uganda Argus*, 26 July 1971.

will depend on the participation rate and the overall population density. In Uganda in 1969 28,450 Africans were in S.1–4 government schools (total enrolment was 33,453, but about 5,000 of these were non-Africans). The total number of Africans aged 15–19 (this is a suitable age group to take for the actual age of pupils) was 831,213, giving an enrolment ratio of 3.42 per cent. The rate in Ankole is probably less than this at about 3 per cent. The proportion of the population of Ankole aged between 15 and 19 years is 8.45 per cent so that the number of potential pupils in any given total population is given by the formula: $P = T \times E \times A$,

where P = number of pupils;
T = total population;
E = enrolment ratio;
A = percentage of T in age group.

In Table 36A Pn is the number of pupils in the catchment area when E is the national figure of 3.42 per cent; Pa is the number when E is the Ankole estimate of 3 per cent. This table illustrates the effect of rising population density on the numbers within a five km range. Even with a density of 400 p.s.k. only ninety-one pupils are within the range. In order to have a minimum threshold of even a two-stream enrolment (320) densities would need to be over 1,500 p.s.k. for an enrolment of the national average and 1,600 p.s.k. for the 3 per cent Ankole estimate. Such densities can be found only in urban communities and in Ankole only in Mbarara town. Given the five km range, a rural day school does not seem feasible in the district.

This five km range, however, is not entirely realistic as has been seen in the case of St. Kaggwa's. Even where boarding accommodation is not provided pupils can go to live with relatives near the school and enrol as day pupils. The existence of two-stream Kabwohe is evidence that a rural day school is not impossible and supply will be met by a demand, despite the apparent lack of demand locally.

A more interesting situation and one more relevant to rationalizing the Ankole school map is obtained when the effective range of the school is enlarged by providing transportation. There is no transport provided in Uganda to take pupils to school, although in Kampala pupils are able to obtain concessionary tickets for travel on city buses. By providing transport in rural areas the catchment area is considerably increased and more pupils come within the school's range.

Chesswas and Hallak concluded that 'a day school can economically serve pupils who are living up to a distance of sixty-five miles (100 km); beyond this distance it is necessary either to replace the day schools by boarding schools and provide boarding facilities or to build new day schools.' Transport costs would be borne by the school and they would clearly raise the cost of a day school, but the study shows that provision of transport within a realistic range of the school would be cheaper than a boarding school. A daily distance of 100 km is clearly impracticable for even by bus the time taken would be much too long. It would seem more reasonable to consider a 25 km distance in both directions along a road from a school. This would mean a journey time of about thirty minutes. The effective catchment area of the school would therefore be along fifty km of road and for five km walking distance to either side of it. The effective catchment area is therefore 500 km²—more than six times the area of the 5 km radius.

Table 36B illustrates the effect transportation will have on the number of potential pupils as population density increases and this is also illustrated in graph form (Figure 5). The population density threshold for a two-stream school is 250 p.s.k., for a three-stream school 360 p.s.k. and for a four-stream school 510 p.s.k. These densities are higher than are found in even the most densely-populated counties of Igara, Shema and Kajara at the present time. When the road distance is increased from 25 to 30 km (Table 36C) the critical density thresholds are 210, 315 and 425 p.s.k. respectively.

Two further facts need to be borne in mind at this point:

a) Increases in the population density to 1979. In the ten-year period 1959–69 the population of Shema increased 44.8 per cent and that of Igara 42.8 per cent. Given these growth rates, for the ten-year period 1969–79 the population density in Shema will increase from 139 p.s.k. to 201 p.s.k., and from 137 p.s.k. to 195 p.s.k. in Igara.
b) Pupils whose homes are outside the catchment area will move into it, if it is possible to lodge with relatives.

Bearing these points in mind, it would seem that given adequate transportation facilities and areas with a 1969

TABLE 36. Population density and potential pupils

A. Catchment area is 5 km radius from the school: 78.55 km²

Density p.s.k.	T	Pn	Pa
50	3 928	11	10
100	7 855	23	20
150	11 783	34	30
200	15 710	45	40
250	19 640	57	50
300	23 568	68	60
350	27 496	80	70
400	31 420	91	80

B. Catchment area is along a road 25 km in each direction from school and 5 km from the road: 500 km²

Density p.s.k.	T	Pn	Pa
50	25 000	72	63
100	50 000	145	127
150	75 000	217	190
200	100 000	289	254
250	125 000	364	317
300	150 000	434	380
350	175 000	506	444
400	200 000	578	507

C. Catchment area is along a road 30 km in each direction from the school and 5 km from the road: 600 km²

Density p.s.k.	T	Pn	Pa
50	30 000	87	76
100	60 000	173	152
150	90 000	260	228
200	120 000	347	304
250	150 000	434	380
300	180 000	520	456
350	210 000	607	532
400	240 000	694	608

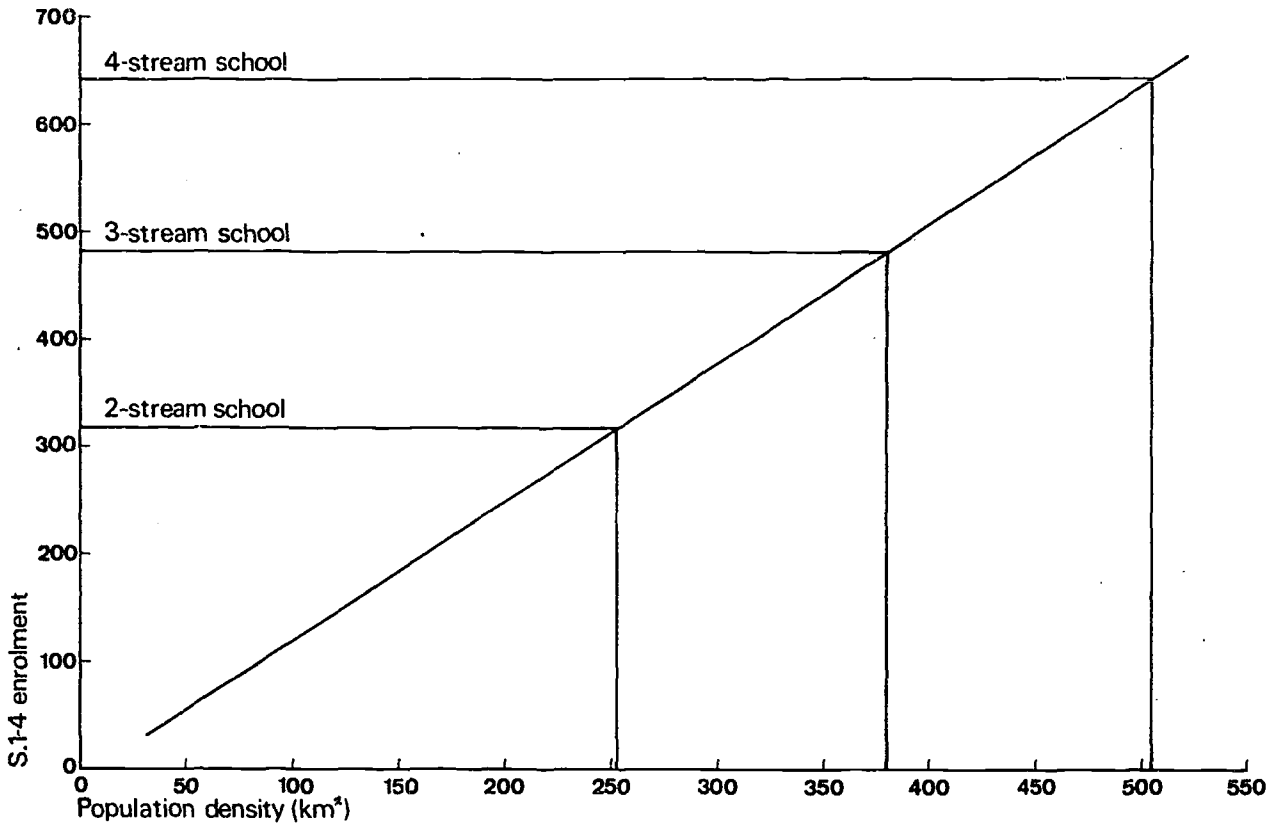


FIGURE 5. *Population density and school enrolment*

population density of over about 125 p.s.k., provision of a feasible rural day school would begin to appear possible.

Provision of transport will bring difficulties that need to be overcome. In the absence of a satisfactory, i.e. cheap, rapid and regular transportation system in rural Ankole, transport will need to be provided and controlled directly by the schools. A bus with as large a capacity as is available will need to be bought. It will be available for other school purposes such as transporting stores, but it must be very clearly stated that the bus must always be available for the transport of pupils each morning and evening. All other considerations bend at all times to this priority. The bus will leave the school in one direction and pick pupils up at fixed points on the return journey. The pupils from this direction will be dropped at the school as the bus goes off to collect pupils in the other direction. The bus must be for pupils only, a condition with which there might be difficulty at first. Once it is known that this condition is enforced and that its timings need to be regular and stops infrequent, many of the assumed difficulties will disappear. This idea has never been tried in Uganda, but it must develop as it is the only realistic long-term solution to educational provision in a poor, rural society.

Just as there is the possibility of pupils living with relatives and friends to be near a school, there is the other possibility of pupils living with relatives or friends outside the school catchment area in order not to go to the nearest day school. In rural Uganda residential mobility is much easier than in developed societies. In order to control this undesirable movement, the criteria for deciding which school a pupil may attend ought to be the first-level school he has attended. If a day school is attractive and considered to be of the same quality as a boarding school, then movement out of the catchment area would not occur.

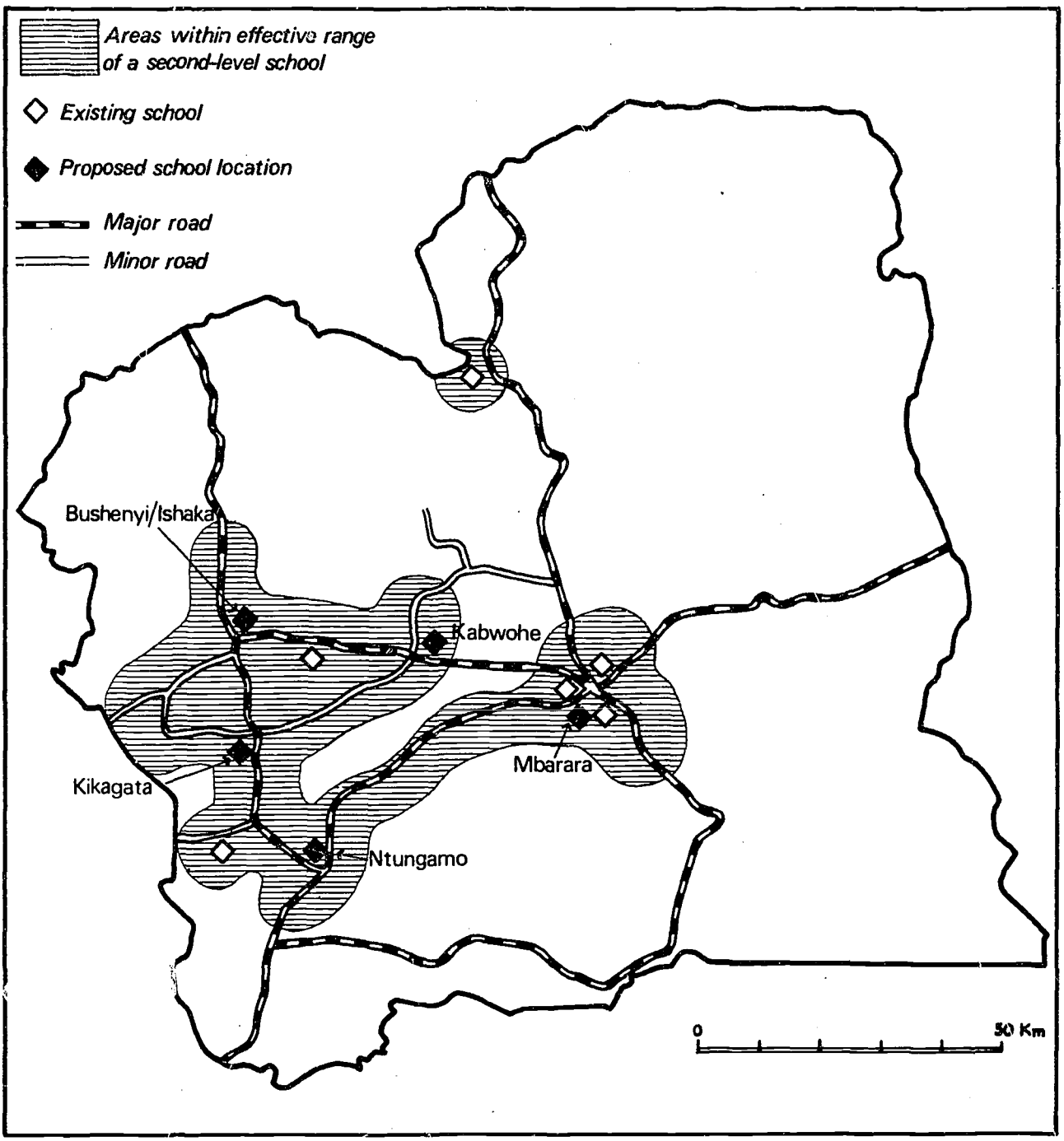
5. Location of new schools

The following school locations are proposed (see also Map 24).

A. BUSHENYI/ISHAKA

Situated on the main tarmac road westwards from Mbarara between the settlements of Bushenyi and Ishaka where the road turns northwards. This is, in fact, in the area of the present St. Kaggwa's private school. It is a very densely populated part of Ankole with many first-level schools and is near an important road junction so that the catchment area can be extended in three directions:

a) 18 km eastward to the Igara/Shema county boundary;
b) 16 km northward to Kyamahunga;
c) 20 km south-westward into Mitoma *gomborora* on the Kigezi/Ankole border.



MAP 24. *Proposed second-level school map, 1979*

The main road for routes eastward and northward is a fast tarmac road, which would mean a lower rate of depreciation on the bus and more rapid transport than on dirt roads. The road to the south-west is of good quality and passable at all seasons and will tap an area with many first-level schools.

The Bushenyi/Ishaka area is the main commercial area of western Ankole, in which there are several developments, notably tea-growing with a new tea factory at Kyamahunga. Population increase is therefore likely to continue in the area. The county headquarters, the administrative centre of Igara, is at Bushenyi. There is mains elec-

tricity supply along the main road and at Ishaka there is a large mission hospital.

B. KABWOHE

Located where the road that runs north-east/south-west through Shema county crosses the main Mbarara/Bushenyi road—in fact near the present Kabwohe private school. This school will serve the eastern half of Shema county and its bus routes will run ten km northwards into Kigarama *gomborora*, southwards for fifteen km through Shuku and westwards for ten km to the Igara border. This is an area known for its coffee production and production of bananas as a cash-crop for export to Kampala. Kabwohe is the main collecting centre. There is a dispensary and mains electricity.

C. NTUNGAMO

To be situated at the junction of the tarmac road running south-westwards from Mbarara into Kigezi and the road running northwards through Kajara and Shema to Ishaka. Ntungamo itself is a small settlement and the population density in the vicinity is not as high as in Shema or Igara. Location of the school here will benefit from the good fast road and routes will extend thirty km northwards to Ndeija to include the many schools between Ndeija and Ntungamo, ten km southwards on this road to the Kajara border and fifteen km north-westwards on the fast dirt road to its junction with the road westwards to Kitunga at Rwashamaire. Although there are many schools along these roads this is not an area with any particularly notable developments. A new hospital is being built by the Seventh Day Adventist Mission at Kashasha between Ndeija and Ntungamo and mains electricity will soon be available as the national grid extends south-westwards to Kabale in Kigezi.

D. KIKAGATA

At the junction of the Ntungamo/Ishaka road and the road that links east and west Shema. Bus routes from this school would go eastwards for 15 km to meet the Kabwohe catchment area, westward for 18 km towards the Kigezi boundary and south-west for 10 km to the several schools near Ibare, just into Kajara. As with two of the previous schools, it will be located near a large new hospital and Kikagata is a large market centre.

D. KIKAGATE

There has already been discussion concerning the presence of day pupils in the existing Mbarara schools, but the idea behind recommending that a new school be established is to cater for the densely-populated areas along the roads out of the town to the south-west and south-east. The other three roads out of Mbarara pass through very sparsely-populated areas, but north-west Isingiro and north-east Rwampara have many first-level schools. It is proposed therefore to have bus routes from Kinoni, 25 km on the Kigezi road, and from Birere, 15 km on the road to the south-east. It will be noted from the map that the catchment area does not extend 5 km to the north of the Kinoni road for just north of this road is the impassable swamp that makes the boundary between Rwampara and Kashari counties. If a day school were to be built in Mbarara this could also provide for pupils from the town, allowing the existing boarding schools to expand by having an intake of boarders whose homes are outside the catchment areas of the existing and proposed schools.

6. Conclusion

The proposed second-level school map of six boarding and five day schools includes more than half the total population of the district within the effective daily reach of a government second-level school and about half the total number of places are for day pupils. Acceptance of these proposals will involve a major change in admissions policy, for the map attempts to reduce the inefficiencies of excess movement to school caused principally by the admissions system, the religious divisions and the existence of single-sex schools. These inefficiencies, introduced when second-level educational opportunity was much less widespread than it is at present, have generated an inertia in the present school map and positive action is needed to overcome it.

Since current policy is to severely restrict expansion of second-level education to 1975/76 and there is uncertainty about policy trends after 1976, the proposals have been formulated to enable the setting-out of priorities. These five proposed new schools have been given in order of the priority to be accorded to them, with Bushenyi/Ishaka being most feasible and desirable in the short term and Mbarara day school least urgent, chiefly because the alternative of having extra classes of day pupils in the three boarding schools in Mbarara is available. These five new schools, together with an additional stream in five of the existing schools, will double the capacity of S.1–4 in Ankole, and even if expansion is delayed so that this enrolment is not available until 1985 or any other date, these priorities will remain valid. The longer the expansion is delayed the more feasible day schools become, because population densities and/or first-level school enrolments rise and an increasing number of potential second-level pupils live within the range of a second-level school.

PART FOUR
IX. Conclusion

The proposals formulated in this case study aim to improve the spatial efficiency of the first- and second-level school systems in Ankole by relating the distribution of schools more closely to the distribution of actual and potential pupils. The proposed first-level school map for 1979 involves a change of emphasis in enrolments from the western high-density areas to the eastern low-density areas. Additional enrolments are more particularly required in the eastern counties, not only because current enrolment ratios are relatively low, but also because these are the areas where population growth will be most rapid. The five new second-level day schools that are proposed are all in high-density areas with high enrolment ratios and can cater for a local intake of pupils whose homes are within the effective daily range of the school.

There is at the present time an important school of thought on educational development in Africa that would hold the planning of a school map to be irrelevant or possibly even harmful. Upholders of this view believe that any expansion of formal education should be in areas of greatest demand, i.e. in areas most able or willing to pay for the service provided, and that market forces should be allowed to operate—the demand will call forth a supply response. A 'rational' school map from these premises will therefore be a reflection of the distribution of demand for education. For political reasons, if for no others, such a view would be considered unacceptable, for it is one of the chief aims of African governments to reduce existing social and spatial inequalities, although the extent of inequality that is acceptable might vary from country to country. An integral part of any such policy must be to ensure a more equitable distribution of educational opportunity at national and local levels. The official conception of a 'rational' school map will be related more to the distribution of population than to the distribution of demand for schools.

The practicalities of evolving a more rational school map must therefore be approached from the supply side—to ensure a pattern of supply to match the desired pattern of opportunity. A supply will create its own demand, especially at the first level, and the evidence for this can be found in the present first-level school map for Ankole. Wide differentials in enrolment rates within each of the counties, with the highest rates in the *gomborora* in which the principal mission focuses are located, occur as a result of more schools being established in these *gombororas*. The school map must be regarded as a device for generating patterns of demand as well as a device for planning the distribution of educational opportunity and provision.

The expansion of education in Uganda has been largely an expression of patterns of demand, with communities themselves or voluntary agencies deciding upon the location of schools. As long as this situation continues, there is little possibility of effective planning through school mapping. An important premise of all the proposals is that the government play a much more positive role as an innovator, both in taking the initiative for establishing new schools and in re-organizing the exisiting map to reduce inefficiencies caused by such factors as differential demand and the competition of denominational groups. The principal aim of the proposals for the first-level school map is therefore to counter the effects of differential demand by the more rational criterion of equality. In the second-level school map, however, the opposite situation is found, for the demand is given by the distribution of those who pass the first-level leaving examination and have qualified for admission to a government second-level school. The map cannot influence this distribution but it seeks to relate the supply of schools to the distribution of demand.

The school maps for the first and second levels have been drawn up to conform to existing administrative, financial and pedagogical structures. There are no proposals for reforms as radical as those envisaged, for example, by Bennett[1] for, inadequate as present structures might be, they must be accepted as a basis for realistic planning proposals. Any changes that are envisaged are of degree rather than kind and, in particular, the extent to which the government controls the direction as well as the pace of any expansion.

'A major pre-requisite for rational planning ... of the education system in under-developed countries that is urgently needed is very much improved statistics.'[2] This

1. See N. Bennett. 'Primary education in rural communities—an investment in ignorance' in *Journal of development studies*. London, 1970 (Vol. 6, No. 4, pp. 92-103)
2. See G. Myrdal, *The challenge of world poverty. A world anti-poverty programme in outline*. New York, Panther Books, 1970 (p. 173)

conclusion, derived from a very exhaustive study of the situation in the countries of southern Asia, is certainly valid for Uganda. There is considerable statistical deficiency for educational planning at the national level and the deficiencies are even more marked in the spatial component of available statistics. Data on the actual as well as the notional age of pupils, drop-out and repeater rates and private school enrolments are all required if planning is to be pursued systematically. Any planning at the district level in the past has certainly not been pursued from a statistical base, but has been little more than a series of *ad hoc* decisions. A major effort is required to collect relevant statistics and, equally important, have them available at district headquarters in a form that can be useful for decision-making. Lack of statistical support is probably the chief single draw-back to formulating and using a school map. It is certainly a major defect of this study, especially for estimates of current and projected enrolment aggregates and patterns.

A rational school map is one that generates rational patterns of home/school movement. Analysis of existing patterns of movement has revealed very considerable inefficiencies, caused principally by religious rivalry, variations in school quality and the existence at the second level of single-sex schools. At the first level these inefficiencies result in some children walking considerable distances to a school which is not their nearest school; at the second level they result in a great deal of money being spent on long journeys to and from school at the beginning and end of each term. The contribution of the proposed school maps is to reduce unnecessarily long journeys by relating the distribution of provision more directly to the distribution of enrolment. At the first level this has meant pursuing a policy to ensure that, subject to minimum threshold conditions being satisfied, all homes are within range of a school; at the second level the school map introduces the possibility of providing day schools in areas from which pupils come, instead of the very expensive boarding schools. There is considerable saving per school place for the government and also for many pupils, particularly those who would, given the present school map, attend a day school in Kampala, and for their parents also there is a very considerable saving. With daily bussing the frequency of movement is increased, but its extent and aggregate annual cost much reduced.

This case study for the School Map Project has involved a demographic approach to planning changes in the spatial structure of the educational system. At the scalar level of this study this is the only satisfactory approach, for it highlights the major problem and challenge facing educational development in Africa: how can the system adjust to an exceptionally high rate of population change? In Ankole the annual rate of growth is likely to be between 3.7 and 4.7 per cent until 1979 and internal re-distribution of the population will mean that some parts of the district will have very low growth rates and others will have rates of over 10 per cent per annum. In Uganda, and in Africa in general, the very serious implications for the educational system of population growth have not had the attention they warrant; and implications of the very varied and changing patterns of population movement have been often ignored altogether. The use of the school map as a technique in educational planning provides an opportunity for identifying these components of change and projecting them to provide a basis for planning a more rational distribution of schools.

IIEP commentary

1. General commentary

The purpose of this case study is to demonstrate the use of school mapping techniques in planning the development of the school system in a tropical African setting.

As in many other countries of the African continent, Uganda has experienced a dramatic increase in its school population coupled with fast growth of enrolments at the first and second levels. This growth of enrolment, as shown in the report, is the result of governmental, private and local initiative, with the effect of creating imbalances in the spatial distribution of the schools; this in turn leads to inequalities of educational opportunity among geographical areas. With this in mind, the author of this study has examined 'how the spatial structure of the educational system should change where there is likely to be a 50 per cent increase in population in a ten-year period and, accompanying this growth, very considerable redistribution of the population due to migration'.

The methods used are particularly appropriate, as the deficiency of adequate statistical data prevailing in the Ugandan district of Ankole is a main feature of other African countries; it is therefore most interesting to develop new methods for assessing and evaluating a school network with very limited and inadequate data. A few examples can be listed:

1. Estimating indicators of the pattern of enrolment when accurate data on population by age-group is lacking.
2. Making an analysis of the effect of distance on the movement of pupils to school.
3. Appraising the relationship between the religious denomination of a school and the pattern of enrolment by religious origin.
4. Examining interactions of density of population and size of schools, etc.

This is therefore a particularly interesting and incisive case study which contributes a great deal to the IIEP international research project on methodologies of school location.

However, since this study was necessarily limited in scope and approach, mainly because of lack of data, it must be considered as marking only a stage towards the preparation of more satisfactory techniques for planning the location of schools. For example, major attention has been focused on population growth and mobility as factors determining the geographical distribution of the demand for schooling, to the virtual exclusion of the effects of the quality of the educational supply. More specifically, while a careful examination was made of the geographical origin of the pupils and the non-educational factors (religion, distance from home, etc.) which affect the selection of a particular institution of first-level education, a very brief comment is given on the 'quality of educational service' supplied by each institution; no systematic study is made, either comparing the level of qualification of teachers, enrolment ratios, standard of building and equipment on the one hand, or the degree of attraction each school has on parents and children on the other. The same comments hold true for second-level education where the prestige of some schools is not totally due to hazard but surely to their high standard. According to an IIEP cost study made in 1970, the unit expenditure per day pupil varies from 195.18 shillings to 708 shillings according to the standard of schools; if boarding costs are included, the range is even wider; fees paid per pupil can differ enormously from school to school (from an average per pupil income from fees of 0.2 shillings in a rural day school to as much as 599.87 shillings in a prestigious boarding institution in Kampala, the capital city). The zone of attraction of a very expensive school is certainly the whole country, but the socio-economic group which can hope to benefit from its services is very limited. It is regrettable therefore that no systematic analysis of the effect of the 'quality of educational service' on the origin of pupils was found possible; the implicit assumption is that if the spatial location of schools and homes of pupils can distort the achievement of the target of 'equality of educational opportunity', differences in the standard can do the same.[1]

In this respect, as has been shown in other case studies of this project, a systematic analysis of a few school parameters (cohort analysis, staffing conditions, quality of equipment) can be most illuminating and pave the way for suggestions in terms of improving the effectiveness

1. See the author's comments on this point in Appendix IV.

in the use of educational resources and rationalizing the location of new schools (see for example the case studies on County Sligo, Ireland, and Lower Saxony, Federal Republic of Germany).

2. A few specific guidelines for further research

These guidelines cover assumptions both on the expansion of the educational system and the analysis of their effect on the school map.

1. It is clear from the general diagnosis made by Mr. Gould on school participation by area, that the present structure of the educational system, namely seven years' first level, four years' junior second level and two years' senior second level, is too luxurious for a country at the level of socio-economic development of Uganda, while in many other African countries with a more developed school system and a more prosperous economic setting, first-level education is of five or six years' duration, and second-level education of similar length. If a radical structural reform from the existing 7-4-2 to a 4-4-2 system can be envisaged the whole prospect for the school map in Uganda in general, and in the district of Ankole in particular, would totally change, and most certainly dramatically improve. A theoretical example will illustrate the magnitude of changes a reform of this kind would generate; for the whole of Uganda, the enrolment in P.5 to P.7 represents a significant proportion of the total enrolment, say three-sevenths; everything being equal, in a 4-4-2 system, the density of population in the various *gombororas* of Ankole can accept a comprehensive system of day schools for both first-level and the junior stage; only senior second level would require boarding facilities to enrol enough pupils to operate economically. Thus the entire proposals for both first and second level would be altered, i.e. probably no extra boarding facilities would be needed and the proposals for development would be much more feasible within the financial constraints of the poor districts. Admittedly, due to lack of adequate data and sufficient information on the present trends in the Ministry of Education in Uganda, such a study of the reform is meaningless. But it is indeed one of the main findings of Mr. Gould's investigation that has led to envisaging a reform of the school structure which can help Uganda achieve more easily its target of equality of educational opportunity. In this respect, for the most 'backward' areas of the district an intensive investigation at the village level on what can be done and what formulae of enrolment to use should be undertaken.
2. The proposals for the expansion of first-level education and the guiding principles followed by the author with regard to rationalizing the second-level school network in 1980 are most pertinent; they are rational because (a) they imply more consistency between the geographical distribution of pupils and the spatial location of schools; and (b) they give preference to the least costly solution when two or more alternative formulae for providing schools are possible. However, if more data could be collected, it would be useful to:
   a) envisage more than one solution for drawing a school map;
   b) assess the effect of each solution in terms of pupil/teacher ratio (in 'full-time equivalent'); the rate of use (in places) of school laboratories, workshops and other specialized rooms; the percentage of occupation (in time) of school premises; and the capital cost as well as the recurrent cost.

In brief, a follow-up step to this first attempt by Mr. Gould would be to apply a cost/effectiveness analysis of alternative solutions for the development of education to the area. The result of such a systematic analysis could then be used by the Ugandan Ministry of Education as a guideline for decision-making and planning at the national level.

Finally, a possible future step and more refined research on the school map should include a systematic interdisciplinary approach combining physical planning and social and economic aspects of school location.

Appendixes

Appendix I

SECOND-LEVEL SCHOOLS QUESTIONNAIRE

Please answer the following questions by writing the appropriate information or putting a tick (✓) in the space provided.

1. Where is your parents' present home?
   District .....
   County .....
   Sub-county (*gomborora*) .....
   Parish .....
2. What is the name of the primary school where you sat the primary leaving examination? .....
   in District .....
   County .....
   Sub-county .....
   Parish .....
3. Which one of the following types of accommodation did you occupy during the term when you sat the primary leaving examination?

At home	☐	In a rented room	☐
Rent free with relatives or friends	☐	In a room provided in return for work	☐
In school accommodation	☐	Other	☐

4. What is the name of the secondary school nearest to the school where you were in P.7?
   .....
5. What was the secondary school of your a) 1st choice? b) 2nd choice?
   a) ..... b) .....
6. If you do sufficiently well in Cambridge to go on to H.S.C., which H.S.C. school would you most like to attend?
   .....
7. Are you Male? ☐ Female? ☐
8. Are you African? ☐ Non-african? ☐
9. What is your religion?

Protestant	☐
Roman Catholic	☐
Moslem	☐
Other	☐

10. Now that you are in secondary school are you
    (a) a day pupil? ☐
    (b) a boarder? ☐

Answer questions 11 and 12 only if you are a day pupil at present

11. Which one of the following types of accommodation do you have at the present time?

At home	☐	In a rented room	☐
Rent free with relatives or friends	☐	In a room provided in return for work	☐
Government hostel	☐	Other	☐

12. How do you usually travel to school each day?

Walk	☐
By bicycle	☐
By public transport (taxi or bus)	☐
By private car	☐

Thank you very much for your cooperation.

Appendix II

SECOND-LEVEL SCHOOL SURVEY: DISTANCE GROUPINGS

Mbarara schools (Ntare, Mbarara H. S., Maryhill)

1. Mbarara town.
2. Kashari; N.E. Rwampara (Rugando); N.W. Isingiro (Birere).
3. E. Shema (Kagango, Kigarama); Buhweju, Nyabushosi; the remainder of Rwampara and of Isingiro.
4. The remainder of Ankole; Ruzumbura and Rukiga Counties (Kigezi); Koki and Kabula Counties (Masaka).
5. The remainder of Kigezi; Toro (except Bwamba County); the remainder of Masaka.
6. Bwamba; Mubende; Gomba, Mawokota and Butamala Counties (West Buganda).
7. Busiro, Kyaddondo Counties (West Buganda); Bugahya, Buyaga, Bugangazi Counties (Bunyoro).
8. East Buganda; the remainder of Bunyoro.
9. Eastern and Northern Regions.

Bushenyi schools (Bweranyange, St. Kaggwa's)

1. Kitsibo (Bumbaire) *gomborora*
2. The remainder of Igara; Shema.
3. Bunyaruguru, Buhweju, Kajara, Kashari, Rwampara; Ruzumbura (Kigezi).
4. The remainder of Ankole and of Kigezi; Busongora, Bukonjo and Kibale Counties (Toro).
5. The remainder of Toro; Masaka (except Ssese, Bukoto and Kyotera Counties).
6. Ssese, Bukoto, Kyotera; Buwekula County (Mubende).
7. Rest of Mubende; West Buganda (except Busiro, Kyaddondo).
8. Busiro, Kyaddondo; Bulemezi (E. Buganda); Bugahya, Buyaga and Bugangazi (Bunyoro).
9. Remainder of East Buganda and of Bunyoro; Eastern and Northern Regions.

Ibanda
1. Nyabuhikye *gomborora*.
2. The remainder of Mitoma; Rubindi *gomborora* (Kashari).
3. The remainder of Kashari; Buhweju, Nyabushosi; Kibale (Toro).
4. The remainder of Ankole and of Toro (except Bwamba); Ruzumbura (Kigezi); Kabula (Masaka).
5. The remainder of Kigezi; Bwamba; the remainder of Masaka; Buwekula.
6. The remainder of Mubende; West Buganda (except Busiro and Kyaddondo); Bugahya, Buyaga and Bugangazi (Bunyoro).
7. The remainder of West Buganda and of Bunyoro.
8. East Buganda.
9. Eastern and Northern Regions.

Kitunga
1. Rwashamaire.
2. Kajara; Kabira, Kitagata (Shuku); Kebisoni (Ruzumbura); Ndeiza, Ntungamo, Ruhama (Rwampara).
3. Remainder of Kigezi (except Bufumbiro, Ndorwa); remainder of Rwampara and of Shema; Igara.
4. Bufumbiro, Ndorwa; rest of Ankole (except Nyabushosi).
5. Nyabushosi; Koki, Kabula, Bunyangabu (Masaka); Busongora, Bukonjo, Kibale (Toro).
6. The remainder of Masaka and of Toro.
7. West Buganda (except Busiro, Kyaddondo); Mubende.
8. The remainder of West Buganda; Buyaga, Bugahya, Bungangazi.
9. The remainder of Bunyoro; East Buganda; Eastern and Northern Regions.

Appendix III

Letter from the management committee of Nyamirima C.O.U. School to the DEO, Ankole:

Dear Sir,

SELECTING OUR SCHOOL

We should be grateful if you would select our school at the beginning of 1972. Last year we filled in a form which we hope is in your office, but we were not considered.

Our school is situated on a big and good area. At present we have four classrooms and we are now building a four class-rooms building.

We also have two teachers' houses and a latrine. Our enrollment is as follows:

P.I	73
P.II	45
P.III	32
P.IV	30
Total	180 pupils

The problems we have are:
1. We are far away from grant-aided schools and we do not get places for all our children.
2. The distances are very great for small children of P.1 and P.2 to walk.

Waiting for your sympathetic reply,
We remain,
Yours faithfully,

MEMBERS OF THE MANAGEMENT COMMITTEE

Appendix IV

SCHOOL QUALITY

Costs in second-level schools vary considerably and there is a well established hierarchy of schools, with the old established mission schools near Kampala the most prestigious and the newest up-country schools least prestigious. The table (overleaf) indicates that the prestige boarding schools near Kampala have sizeable proportions of pupils from each of the four regions of the country but there is considerable imbalance in Ankole. Ntare (E) the one school with Higher School Certificate classes and the most prestigious school in western Uganda does attract a few pupils from outside the region, but as the evidence presented in this case study has shown, the other schools have very distinct regional intakes. It was indicated (pages 69–70) that pupils are well aware of the variation in quality of education provided in their stated preferences of second-level schools. These variations in costs have little direct effect on differential access to high-cost schools by higher socio-economic groups because:

a) Entry is based solely on performance in the primary leaving examination and not on the ability to pay fees. The best students, no matter what their socio-economic background, will want to attend the most prestigious schools.

b) The fees issue is not really important. As Weeks has shown, the total cost to a student is minimised by paying the high boarding fees compared with the cost of trying to find accommodation and food while attending a day-school away from home. In most cases the boarding fees will be paid in whole or in part by a district authority grant. The pattern of preferences (pages 68–70) is not obviously affected by the fees differential.

TABLE 1. African enrolment in selected government second-level schools, 1970.

School	Location	Type	Sex	Highest[1] class.	Prestige[2]	Enrolment in S1–4 by first-level exam. (percentage)				
						Buganda	West	East	North	Other[3]
A	nr. Kampala	Boarding	Mixed	H.S.C.	Very high	46.2	15.3	20.2	15.9	2.4
B	nr. Kampala	Boarding	Boys	H.S.C.	Very high	51.6	15.3	15.4	14.2	3.4
C	nr. Kampala	Boarding	Girls	H.S.C.	Very high	42.0	25.5	24.0	7.3	1.2
D	nr. Kampala	Boarding	Mixed	'O' level	Medium	52.9	32.7	7.6	6.1	0.7
E	Ankole	Boarding	Boys	H.S.C.	High	2.5	88.1	6.0	2.9	0.5
F	Ankole	Boarding	Boys	'O' level	Low	0.9	98.7	0.4	—	—
G	Ankole	Boarding	Girls	'O' level	Low	2.0	98.0	—	—	0.2
H	Kampala	Day	Mixed	H.S.C.	High	68.1	14.8	8.2	6.9	2.0
I	Kampala	Day	Boys	'O' level	Low	25.1	46.6	3.7	13.4	11.2
J	nr. Kampala	Day	Mixed	'O' level	Low	62.2	23.3	12.2	2.3	—

NOTES 1. H.S.C. = Higher School Certificate classes i.e. up to university entrance; 'O' level = 1st 4 years of secondary school only.
2. This is based on a subjective assessment. Schools rated 'very high' have a national reputation for outstanding achievement; schools rated 'low' are either little known outside their immediate area or have a poor reputation.
3. This includes pupils who were in first-level school outside Uganda, e.g. Sudanese refugees.

SOURCE Ministry of Education

IIEP book list

The following books, published by Unesco:IIEP, are obtainable from the Institute or from Unesco and its national distributors throughout the world:

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Educational planning: a directory of training and research institutions (1968)
Educational planning in the USSR (1968)
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Manpower aspects of educational planning (1968)
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The new media: memo to educational planners by W. Schramm, P.H. Coombs, F. Kahnert, J. Lyle (1967. A report including analytical conclusions based on the above three volumes of case studies)
Planning the location of schools (series of monographs: full list at front of this volume)
Planning the development of universities—I (1971), *II* (1973, Further volumes to appear)
Population growth and costs of education in developing countries by Ta Ngoc Châu (1972)
Qualitative aspects of educational planning (1969)
Research for educational planning: notes on emergent needs by William J. Platt (1970)
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The following books, produced in but not published by the Institute, are obtainable through normal bookselling channels:

Managing educational costs by Philip H. Coombs and Jacques Hallak. Published by Oxford University Press, New York, London and Toronto, 1972
Quantitative methods of educational planning by Héctor Correa. Published by International Textbook Co., Scranton, Pa., 1969
The world educational crisis: a systems analysis by Philip H. Coombs. Published by Oxford University Press, New York, London and Toronto, 1968
Education in industrialized countries by R. Poignant. Published by N.V. Martinus Nijhoff, The Hague, 1973

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